# APPENDIX F PROPERTY VALUE IMPACT STUDIES





### PROPERTY VALUE IMPACT STUDY

## IMPACT STUDY OF PROPERTY VALUES ADJACENT TO SOLAR A STUDY OF ELEVEN EXISTING SOLAR FACILITIES

Located in Chisago County, Minnesota; Bladen and Cumberland Counties, North Carolina; Rutherford County, North Carolina; Lapeer County, Michigan; Wilson County, North Carolina; Suffolk County, New York; Isle of Wight County, Virginia; Marion County, Indiana; Brevard County, Florida; and Miami-Dade County, Florida

#### PREPARED FOR:

Mr. Dylan Stickney Development Manager Vesper Energy Portfolio I, LLC 906 W. McDermitt Drive Suite 116-366 Allen, TX 75013

#### **SUBMITTED BY:**

CohnReznick LLP Valuation Advisory Services 200 S Wacker Drive, Suite 2600 Chicago, IL 60606 (312) 508-5900

Andrew R. Lines, MAI Patricia L. McGarr, MAI, CRE, FRICS

#### **EXECUTIVE SUMMARY**

Vesper Energy Portfolio I, LLC is seeking approvals for proposed solar farms to be located in various locations throughout the State of Ohio.

CohnReznick has been engaged to complete a property value impact study to determine whether existing solar farms have had any measurable impact on the value of adjacent properties. This report summarizes the findings of that study.

The purpose of the assignment is to determine whether proximity to an existing solar farm resulted in any significant measurable and consistent impact on adjacent property values, given the existing uses and zoning of nearby property at the time of development; address potential local concerns regarding any proposed solar farm having a perceived impact on surrounding property values; and, provide a consulting report that can address the required criteria for obtaining approvals for future Vesper Energy Portfolio I, LLC projects.

We have included 11 established solar farms in our study, focusing on rural and suburban areas with neighboring residential homes, that are comparable to the proposed solar farm locations in Ohio. Solar farms with a variety of output capacities have been studied because of their proximity to residential properties. We have studied the sales of property located adjacent to the solar farms in order to see if proximity to this use results in any consistent and measurable impact on property values.

Since 1984, we have studied the impacts on adjacent land values of schools, landfills, waste transfer stations, stone quarries, cellular towers, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises. Over the past three years, we have studied more than 25 existing solar farms across the United States of varying sizes to determine whether there has been any measurable impact on adjacent property values.

#### **METHODOLOGY**

The basic premise of this comparative analysis is that if there is any impact on the value of adjacent properties, by virtue of their proximity to a solar farm, it would be reflected by such factors as the range of sale prices, differences in unit sale prices, conditions of sale, and overall marketability. When comparing these factors for properties near the solar farm ("Test Area Sales") to properties locationally removed from the solar farm ("Control Area Sales"), we would expect to see some emerging and consistent pattern of substantial difference in these comparative elements - if, in fact, there was an effect.

#### STUDY FEATURES

Our study includes research and analyses of existing solar farms in the Midwest Southeast, and East, (collectively, the "Existing Solar Farms"), as well as the property value trends of the adjacent land uses, including agricultural, single family and residential properties, a review of published studies, and discussions with market participants. Adjoining properties physically adjacent to the Existing Solar Farms that sold in an arm's length transaction after the completion of the Existing Solar Farms were categorized as Test Area Sales that qualified for further analysis in a paired sale analysis to determine if a difference in price exists.

- Solar Farm 1 (North Star Solar Farm) is located near the City of North Branch, in unincorporated Chisago County, Minnesota. This is a 100 MW AC solar farm that is situated on approximately 1,000 acres of land and is surrounded by agricultural land uses and some residential uses. We found four adjoining properties that qualified for a paired sales analysis, one of which sold twice, for a total of five sales.
- Solar Farm 2 (Innovative Solar 42) is located near the City of Fayetteville in Bladen and Cumberland Counties, North Carolina on 414 acres. The solar farm has a capacity of 71 MW AC of power and the surrounding uses consist of agricultural land, forests, and single-family homes. We found one adjoining property that qualified for a paired sales analysis.
- Solar Farm 3 (Rutherford Solar Farm) is located near the city of Forest City in Rutherford County, North Carolina in a primarily rural area, on a 489-acre parcel of land. The solar farm has a capacity of 61 MW AC of power and the surrounding uses consist of agricultural land, vacant land, and single-family homes. We found two adjoining properties that qualified for a paired sales analysis.
- Solar Farm 4 (DTE's Lapeer Michigan Solar Projects) is a two-farm project, the Demille Solar Farm and the Turrill Solar Farm, located in the City of Lapeer, Michigan. Demille is a 28.56 MW AC solar farm that is situated on approximately 170 acres of land and is surrounded by agricultural land uses and residential uses. Turrill is a 19.72 MW AC solar farm situated on approximately 200 acres. We found four adjoining properties that qualified for a paired sales analysis.
- Solar Farm 5 (Elm City Solar Facility) is located in the City of Elm City in Wilson County, North Carolina, in a primarily rural area, on 354 acres. The solar farm has a capacity of 40 MW AC of power and the surrounding uses consist of forest, industrial, vacant, and single-family homes. We found one adjoining property that qualified for a paired sales analysis.
- Solar Farm 6 (Shoreham Solar Commons) is located in a suburban township in Suffolk County, in the hamlet of Brookhaven, which is a coastal city located just south of the Long Island Sound, on Long Island. The solar farm has a capacity of 24.9 MW AC of power and the surrounding uses primarily consist of single-family residences. We found one adjoining property that qualified for a paired sales analysis.

- Solar Farm 7 (Woodland Solar Farm) is located near the City of Windsor in unincorporated Isle of Wight County, Virginia, in a primarily rural area, on 204 acres. The solar farm has a capacity of 19 MW AC of power and the surrounding uses consist of agricultural land, forest land, and single family homes. We found one adjoining property that qualified for a paired sales analysis.
- Solar Farm 8 (S-Power Shoreham Solar) is located just north of Shoreham Solar Commons (Solar Farm 6). It is also surrounded primarily by single-family residences. This solar farm has a capacity of 13.4 MW AC and is situated on 59.8 acres. We found two adjoining properties that qualified for a paired sales analysis.
- Solar Farm 9 (Dominion Indy Solar Farm III) is located in a suburban, yet rural area outside of Indianapolis, in Marion County, Indiana, on a parcel totaling 134 acres. The solar farm has a capacity of 8.6 MW AC of power and the surrounding uses consist of agricultural land to the east, west and south, and a single-family subdivision to the north. We found ten adjoining properties that qualified for a paired sales analysis, two of which have resold for a total of twelve sales.
- Solar Farm 10 (Barefoot Bay Solar Energy Center) is located near the city of Sebastian, in unincorporated Brevard County, Florida on 504.75 acres. The solar farm has a capacity of 74.5 MW AC and the surrounding uses consists of some industrial, agricultural land, single family homes, and municipal land. We found seven adjoining properties that qualify for a paired sales analysis.
- Solar Farm 11 (Miami-Dade Solar Energy Center) is located in unincorporated Miami-Dade County, Florida on 465 acres. The solar farm has a capacity of 74.5 MW AC and the surrounding uses consists of agricultural land, single family homes, and federally owned government land. We found three adjoining properties that qualify for a paired sales analysis.

We analyzed 39 adjoining property sales in Test Areas and 248 comparable sales in Control Areas, collectively, for these identified solar facilities, that have occurred over the past seven years.



#### **RESULTS**

We reviewed existing, proposed, and under construction solar facilities in Ohio and determined there was not enough reliable sales data available to prepare a paired sales analysis or a Before and After analysis for Ohio facilities. Due to the limited information available to study within Ohio, we have studied similar utility-scale solar farms in surrounding states.

With regard to their impact on nearby property values, our studies of facilities of various sizes demonstrate that there is no measurable and consistent difference in property values for properties adjacent to solar farms when compared to similar properties locationally removed from their influence. This is supported by our interviews with local real estate brokers who have stated that there is no difference in price, marketing periods or demand for the homes directly adjacent to the solar farm facilities.

We have also interviewed market participants, including County and Township Assessors (with solar facilities in their districts), to give us additional insight as to how the market evaluates farmland and single-family homes located adjacent to solar farms. Local assessors we have spoken with directly have noted that there is no evidence of negative property value impacts due to proximity to a solar farm, and local brokers interviewed have noted that there has been no effect on pricing, marketing time, nor conditions of sale.

We performed three Before and After Analyses, in which we compared sales that occurred prior to the announcement and subsequent development of the solar farm project with sales that occurred after completion of the solar farm project for one solar farm in Indiana, one solar farm in Florida, and one in Minnesota, for both adjoining and non-adjoining properties. No measurable impact on property values was demonstrated in these analyses.

We have also reviewed studies prepared by other real estate valuation experts that specifically analyzed the impact of solar facilities on nearby property values. These studies found little to no measurable or consistent difference in value between the Test Area Sales and the Control Area Sales attributed to the proximity to solar farms.

Considering all of this information, we can conclude that since the property values of the Adjoining Property Sales (Test Area Sales) for the existing solar farms analyzed were not adversely affected by their proximity to solar farms, that properties surrounding other solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short- or long-term.



#### LETTER OF TRANSMITTAL

April 8, 2021

Mr. Dylan Stickney Development Manager Vesper Energy Portfolio I, LLC 906 W. McDermitt Drive Suite 116-366 Allen, TX 75013

SUBJECT: Property Value Impact Study

Real Estate Adjacent to Solar Farms

Dear Mr. Stickney:

CohnReznick is pleased to submit the accompanying adjacent property values impact study regarding proposed solar energy uses.

In developing this report, we have researched the identified existing solar farms listed below, researched articles and other published studies, and interviewed real estate professionals and Township/County Assessors active in the market where solar farms are located, to gain an understanding of market perceptions.

	CohnReznick - Existing Solar Farms Studied										
Solar Farm #	Solar Farm	County	State	MW AC	Acreage						
1	North Star	Chisago	MN	100.00	±1,000						
2	Innovative Solar 42	NC	71.00	414							
3	Rutherford Farm	Rutherford	NC	61.00	489						
4	DTE Lapeer	LaPeer	MI	48.28	±365						
5	Elm City Solar	Wilson	NC	40.00	354						
6	Shoreham Solar Commons	Suffolk	NY	24.90	150						
7	Woodland Solar	Isle of Wight	VA	19.00	211						
8	S-Power Shoreham Solar	Suffolk	NY	13.40	60						
9	Dominion Indy Solar III	Marion	IN	8.60	129						
10	Barefoot Bay Solar Energy Center	Brevard	FL	74.50	505						
11	Miami-Dade Solar Energy Center	Miami-Dade	FL	74.50	465						

The purpose of the assignment is to determine whether the proximity of the proposed renewable energy facility use (solar farm) will result in any significant measurable and consistent impact on adjacent property values, given the existing uses and zoning of nearby property at the time of development. The intended use of our opinions and conclusions is to assist the client in addressing local concerns regarding a solar farm's potential



impact on surrounding property values, in addition to addressing the required criteria for obtaining approvals for solar energy projects proposed by Vesper Energy Portfolio I, LLC, such as minimizing the impact on adjacent property values. We have not been asked to value any specific property, and we have not done so.

The client and intended user for the assignment is Vesper Energy Portfolio I, LLC. Additional intended users of our findings may include various county officials in the state of Ohio and the Ohio Power Siting Board ("OPSB"). The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

The assignment is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute as well as applicable state appraisal regulations. Based on the analysis in the accompanying report, and subject to the definitions, assumptions, and limiting conditions expressed in the report, our findings follow below.

#### CONCLUSIONS

We analyzed 39 adjoining property sales and over 248 comparable sales, collectively, for the identified 11 solar farms, that have occurred over the past seven years. We note that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes nor has it deterred the development of new single-family homes on adjacent land.

No empirical evidence evolved that indicated a more favorable real estate impact on the Control Area Sales as compared to the adjoining, Test Area Sales with regard to such market elements as:

- 1. Range of sale prices
- 2. Differences in unit sale prices
- 3. Conditions of sale
- 4. Overall marketability
- 5. New Development
- 6. Rate of Appreciation

We have also reviewed studies prepared by other real estate valuation experts that specifically analyzed the impact of solar facilities on nearby property values. These studies found little to no measurable and consistent difference in value attributed to the proximity to solar farms between unit prices for Test Area Sales and Control Area Sales and noted that solar energy uses are generally considered a compatible use. We have also interviewed market participants, including County and Township Assessors, to give us additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm.

Considering all of this information, we can conclude that since the Adjoining Property Sales (Test Area Sales) for the existing solar farms analyzed were not adversely affected by their proximity to solar farms, that properties surrounding other solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short- or long-term periods.



If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Very truly yours,

#### CohnReznick LLP

Cult.

Andrew R. Lines, MAI Principal - Valuation Advisory Services Certified General Real Estate Appraiser

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Expires 11/30/2022
Indiana License No. CG41500037
Expires 6/30/2022
Kentucky License 5663
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#### **TABLE OF CONTENTS**

EXECUTIVE SUMMARY	1
Methodology	1
Study Features	
RESULTS	4
LETTER OF TRANSMITTAL	5
SCOPE OF WORK	
MARKET ANALYSIS OF THE IMPACT ON VALUE FROM SOLAR FARMS	10
METHODOLOGY	10
Published Studies	11
ADJACENT PROPERTY VALUES IMPACT STUDY	14
OVERVIEW OF SOLAR DEVELOPMENT IN THE UNITED STATES	
NATIONAL UTILITY SCALE ENERGY PRODUCTION	
ENERGY PRODUCTION IN OHIO	
LARGE-SCALE SOLAR IN THE UNITED STATES	
SELECTION OF SITES AND REFINEMENT OF METHODOLOGY	
SOLAR FARM 1: NORTH STAR SOLAR FARM, CHISAGO COUNTY, MN	
SOLAR FARM 2: INNOVATIVE SOLAR 42, BLADEN AND CUMBERLAND COUNTIES, NC	
SOLAR FARM 3: RUTHERFORD FARM, RUTHERFORD COUNTY, NC	
SOLAR FARM 4: DTE'S LAPEER SOLAR PROJECT, LAPEER, MICHIGAN	
SOLAR FARM 5: ELM CITY SOLAR FARM, WILSON COUNTY, NC	
SOLAR FARM 6: SHOREHAM SOLAR COMMONS, SUFFOLK COUNTY, NY	
SOLAR FARM 7: WOODLAND SOLAR FARM, ISLE OF WIGHT COUNTY, VA	
SOLAR FARM 6. S-POWER SHOREHAM SOLAR FARM, SUFFOLK COUNTY, IN 1	
SOLAR FARM 9. DOMINION INDY SOLAR III, MARION COUNTY, IN	
SOLAR FARM 11: MIAMI-DADE SOLAR ENERGY CENTER, MIAMI DADE COUNTY, FL	
SUMMARY OF ADJOINING USES	104
MARKET COMMENTARY	105
SOLAR FARM FACTORS ON HARMONY OF USE	108
SUMMARY AND FINAL CONCLUSIONS	112
CERTIFICATION	115
ASSUMPTIONS AND LIMITING CONDITIONS	117
ADDENDUM A: APPRAISER QUALIFICATIONS	121



#### **SCOPE OF WORK**

#### **CLIENT**

The client for this assignment is Vesper Energy Portfolio I, LLC.

#### **INTENDED USERS**

Vesper Energy Portfolio I, LLC; other intended users may include the client's legal and site development professionals, and the Ohio Power Siting Board ("OPSB"). Additional intended users of our findings include all relevant permitting authorities for proposed solar energy use sites in Ohio.

#### INTENDED USE

The intended use of our findings and conclusions is to address certain criteria required for the granting of approvals for proposed solar energy uses in various location in the state of Ohio, including the minimization of impact on nearby or adjacent property values. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

#### **PURPOSE**

The purpose of the assignment is to determine whether the proximity of the studied facilities (solar farms) resulted in any significant measurable and consistent impact on adjacent property values, given the existing uses and zoning of nearby property at the time of development; address local concerns regarding a solar farm use having a perceived impact on surrounding property values; and, provide a consulting report that can address criteria for obtaining approvals for future solar projects proposed by Vesper Energy Portfolio I, LLC.

#### **EFFECTIVE DATE**

DATE OF REPORT

April 8, 2021

April 8, 2021

#### **PRIOR SERVICES**

USPAP requires appraisers to disclose to the client any services they have provided in connection with the subject property in the prior three years, including valuation, consulting, property management, brokerage, or any other services.

This report is a compilation of the Solar Farms which we have studied over the past three years, and is not evaluating a specific subject site. In this instance, there is no "subject property" to disclose.

#### INSPECTION

Patricia L. McGarr, MAI and Andrew R. Lines, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.



#### MARKET ANALYSIS OF THE IMPACT ON VALUE FROM SOLAR FARMS

#### **METHODOLOGY**

According to Randall Bell, PhD, MAI, author of text *Real Estate Damages*, published by the Appraisal Institute in 2016, the paired sales analysis is an effective method of determining if there is a detrimental impact on surrounding properties.

"This type of analysis may compare the subject property or similarly impacted properties called **Test Areas** (at Points B, C, D, E, or F) with unimpaired properties called **Control Areas** (Point A). A comparison may also be made between the unimpaired value of the subject property before and after the discovery of a detrimental condition. If a legitimate detrimental condition exists, there will likely be a **measurable and consistent difference** between the two sets of market data; if not, there will likely be no significant difference between the two sets of data. This process involves the study of a group of sales with a detrimental condition, which are then compared to a group of otherwise similar sales without the detrimental condition."

As an approved method, paired sales analysis can be utilized to extract the effect of a single characteristic on value. By definition, paired data analysis is "a quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties; to apply this technique, sales or rental data on nearly identical properties is analyzed to isolate a single characteristic's effect on value or rent." The text further describes that this method is theoretically sound when an abundance of market data, or sale transactions, is available for analysis. It may be impractical for those property types that do not frequently sell, such as commercial properties. The Appraisal of Real Estate states that the lack of data can reduce the strength of the analysis, and that "an adjustment derived from a single pair of sales is not necessarily indicative" of the value of the single difference (i.e., proximity to an external factor).

Our methodology, which includes utilizing paired sale analysis, does not rely on multiple subjective adjustments that are typical in many appraisals and single-paired sales analyses. Rather, our methodology remains objective and the only adjustments required are for market conditions; <sup>3</sup> we have reviewed and relied upon market conditions trends tracked by credible agencies. We applied a Trend Analysis to adjust the Control Sales for market conditions (the time between sales), as this is a variable that affects all properties similarly and can be adjusted for in an objective manner. The constant valuation date was determined to be the date of the Test Area sale. According to the *Dictionary of Real Estate Appraisal*, 6th edition, a Trend Analysis is defined as:

<sup>&</sup>lt;sup>3</sup> Adjusting for market conditions is necessary as described in The Appraisal of Real Estate 14th Edition as follows: "Comparable sales that occurred under market conditions different from those applicable to the subject on the effective date of appraisal require adjustment for any differences that affect their values. An adjustment for market conditions is made if general property values have increased or decreased since the transaction dates."



<sup>&</sup>lt;sup>1</sup> Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016.

<sup>&</sup>lt;sup>2</sup> The Appraisal of Real Estate 14<sup>th</sup> Edition. Chicago, IL: Appraisal Institute, 2013.

"A quantitative technique used to identify and measure trends in the sale prices of comparable properties; useful when sales data on highly comparable properties is lacking but a broad database on properties with less similar characteristics is available. Market sensitivity is investigated by testing various factors that influence sale prices."

We extracted a monthly appreciation rate for each set of Control Sales and applied that to each respective grouping to normalize the sales to a common valuation date.

#### **PUBLISHED STUDIES**

We have also considered various studies that consider the impact of solar farms on surrounding property values. The studies range from survey-based formal research to less formal analyses.

The studies show that over the past decade, the solar industry has experienced unprecedented growth. Among the factors contributing to its growth were government incentives, significant capacity additions from existing and new entrants and continual innovation. Solar farms offer a wide array of economic and environmental benefits to surrounding properties. Unlike other energy sources, solar energy does not produce emissions that may cause negative health effects or environmental damage. Solar farms produce a lower electromagnetic field exposure than most household appliances, such as TV and refrigerators, and studies have confirmed there are no health issues related to solar farms.<sup>4</sup> The Solar Foundation measured that the solar industry increased employment by 22 percent from 2013 to 2015. Solar farm construction in rural areas has also dramatically increased the tax value of the land on which they are built, which has provided a financial boost to some counties.

Beyond creating jobs, solar farms are also benefiting the overall long-term agricultural health of the community. The unused land, and also all the land beneath the solar panels, will be left to repair naturally. In the long run this is a better use of land since the soil is allowed to recuperate instead of being ploughed and fertilized year in and year out. <sup>5</sup>

A solar farm can offer some financial security for the property owner over 20 to 25 years. Once solar panel racking systems are removed, the land can revert to its original use.<sup>6</sup>

Property value impact studies prepared by other experts have also noted that the installation of utility-scale solar on a property has no measurable or consistent negative impact on adjoining property's value. According to a report titled "Mapleton Solar Impact Study" from Kirkland Appraisals, LLC, conducted in Murfreesboro, North Carolina in September 2017, which studied 13 existing solar farms in the state, the study found that the proposed solar farm had no impact to adjacent vacant residential, agricultural land, or residential homes. The adjoining land for the paired data sales analysis in the report was primarily low density residential and agricultural uses, although there was one case where the solar farm adjoined to two dense subdivisions of homes.

<sup>&</sup>lt;sup>6</sup> NC State Extension. (May 2016). Landowner Solar Leasing: Contract Terms Explained. Retrieved from: https://content.ces.ncsu.edu/landowner-solar-leasing-contract-terms-explained



<sup>&</sup>lt;sup>4</sup> "Electromagnetic Field and Public Health." Media Centre (2013): 1-4. World Health Organization.

<sup>&</sup>lt;sup>5</sup> https://www.energy.gov/eere/solar/farmers-guide-going-solar

We note there have been two academic studies completed that attempt to quantify the effect on property values due to proximity to solar. The first paper is a study completed by The University of Texas at Austin, published in May 2018.<sup>7</sup> The paper attempts to qualify that there may be a possible detrimental impact on property values for real estate (single-family homes) located in close distances to a solar facility, and with larger facility size. This opinion was based on survey results with local assessors, of which a majority indicated they had reviewed no data that indicated a negative impact. A small number of those assessor respondents hypothetically surmised an impact, but none had evidence of such statements. Additionally, the research team behind the paper conducted a geospatial analysis to examine both housing density and median income surrounding these facilities, and made the conclusion "that relatively few homes are likely to be impacted" since few homes are located in proximity to these facilities since they are located in areas with lower populations."

Finally, the University of Texas paper concluded that a real estate professional should undertake a more specific impact study to address and test their initial findings.

The second paper is a study completed by a team at the University of Rhode Island, published in September 2020.8 The study utilized a hedonic pricing model, or multiple regression analysis, to quantify the effect of proximity on property values due to solar by studying existing solar installations in Massachusetts and Rhode Island. A significant weakness of the study is that the data points in the Test Area group extend up to a mile away from solar installations, and the preparer of the study acknowledged that view of a solar farm was not a tracked attribute of the sales. Our review of the study indicated that there was not enough reliable data utilized in the analysis to produce credible results and certain data points included in the analysis should have been omitted. That being stated, the total impact on adjacent property was considered by the model to be 1.7 percent - or a very nominal amount that we believe to be immaterial.

The Chisago County (Minnesota) Assessor's Office conducted their own study on property prices adjacent to and in the close vicinity of the North Star solar farm in Chisago County, Minnesota. At the November 2017 Chisago County Board meeting, John Keefe, the Chisago County Assessor, presented data from his study. He concluded that the North Star solar farm had, "no adverse impact." His study encompassed 15 parcels that sold and were adjacent or in the close vicinity to the solar farm between January 2016 and October 2017. Almost all of the properties sold, were at a price above the assessed value. He further stated that, "It seems conclusive that valuation has not suffered." <sup>9</sup>

Furthermore, Grant County, Kentucky Property Value Administrator, Elliott Anderson, told us that Duke Energy built a solar farm near Crittenden, adjacent to existing homes on Claiborne Drive in December 2017. There have been nine arm's length homes sales on that street since the solar farm came online, due to normal market

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<sup>&</sup>lt;sup>7</sup> Al-Hamoodah, Leila, et al. An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations. Policy Research Project (PRP), LBJ School of Public Affairs, The University of Texas at Austin, May 2018, emp.lbl.gov/sites/default/files/property-value impacts near utility-scale solar installations.pdf.

<sup>&</sup>lt;sup>8</sup> Gaur, V. and C. Lang. (2020). Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island. Submitted to University of Rhode Island Cooperative Extension on September 29, 2020. Accessed at https://web.uri.edu/coopext/valuing-sitingoptions-for-commercial-scale-solar-energy-in-rhode-island/.

<sup>&</sup>lt;sup>9</sup> Chisago County Press: County Board Real Estate Update Shows No "Solar Effects" (11/03/2017)

conditions. Each of those nine homes sold higher than its Assessed Value, one over 32 percent higher. The Assessed Values in Grant County are based on 100 percent Fair Market Values as determined by the Property Value Administrator's office. Anderson noted that several more lots are for sale by the developer and four more homes are currently under construction, set to deliver in 2021. Anderson said that <a href="the solar farm had no impact either on adjoining home values or on marketability or desirability of those homes adjacent to the solar farm.">the solar farm had no impact either on adjoining home values or on marketability or desirability of those homes adjacent to the solar farm.</a>
Anderson added, the homes sold at market prices in a market that has been experiencing a boom since at least mid-2019.



#### ADJACENT PROPERTY VALUES IMPACT STUDY

#### **OVERVIEW OF SOLAR DEVELOPMENT IN THE UNITED STATES**

Solar development increased almost exponentially over the past ten years in the United States as technology and the economic incentives (Solar Investment Tax Credits or ITC) made the installation of solar farms economically reasonable. The cost to install solar panels has dropped nationally by 70 percent since 2010, which has been one factor that led to the increase in installations. A majority of these solar farm installations are attributed to larger-scale solar farm developments for utility purposes. The chart below portrays the historical increase on an annual basis of solar installations in the US as a whole, courtesy of research by Solar Energy Industries Association (SEIA) and Wood Mackenzie, and projects solar photovoltaic (PV) deployment for the next five years, through 2025, with the largest percentage of installations attributed to utility-scale projects.



Source: Wood Mackenzie

The United States installed 13.3 Gigawatts (GW) DC of solar photovoltaic capacity for both residential and utility-scale solar projects installed in 2019, representing an increase of 23 percent year-over-year. The first quarter of 2020 was largely unaffected by the Coronavirus Pandemic, and saw 3.6 Gigawatts (GW) DC installed, the largest first quarter on record by over 1 Gigawatt. However, the Solar Industry is not immune from the pandemic. Second quarter is seeing some impact, most acutely in distributed solar, which is expected to see 31 percent fewer installations as compared to last year, as installers face work stoppages and consumer demand reacts to an impending recession. The pipeline for utility-scale PV, as of June 2020, includes capacity of 51 GW combined



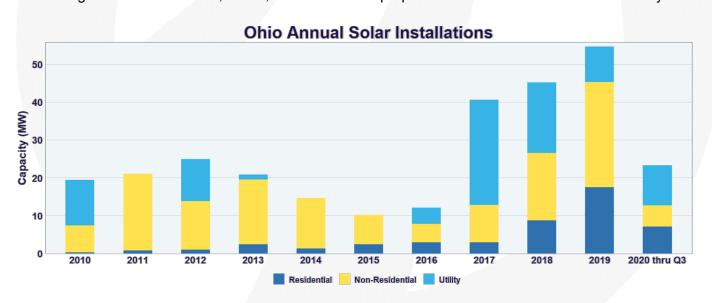
from contracted projects (including those under construction) as well as announced but pre-contract sources.<sup>10</sup> With the increase of utility-scale solar installations across the country, solar projects have become a common and understood feature of the landscape and will continue to proliferate with the projected additional capacity to come online in the coming years despite the downside risks caused by the coronavirus pandemic.

#### NATIONAL UTILITY SCALE ENERGY PRODUCTION

As of December 2020, the U.S. produces almost 1.215 million megawatts (MW) of power each year, according to the U.S. Energy Information Administration (EIA) in 23,380 unique power generation facilities. Of that power produced, three percent is generated from solar facilities, or 46,396.6 MW AC, at 4,519 solar facilities across the country, reflecting an average facility size of 10.27 MW AC. Utility scale solar production, facilities that generate over 5 MW of power, accounts for 33.8 percent of all solar facilities, nationwide, whereas 88.5 percent of power generated in the country comes from utility scale facilities, overall.

#### **ENERGY PRODUCTION IN OHIO**

As of the end of the third quarter of 2020, Ohio had 360.91 MW of solar installed, ranking only 28<sup>th</sup> in the US for the capacity of solar installed. There have been significantly more utility investments in clean energy with continued growth on the horizon, with 1,904 MW of solar proposed to be installed over the next five years.



As of December 2020, there are currently no operating solar farms in Ohio with capacities greater than 25 MW, although new large, utility scale projects have been approved in Ohio and the surrounding states within the last 2 years, or are under construction. There are 7 unique solar power generation facilities that are planned for construction in Ohio, according to the EIA, that will produce 1,066 MW of power when in service, as of December



<sup>&</sup>lt;sup>10</sup> Solar Energy Industries Association, Solar Market Insight Report 2020 Q2, released June 2, 2020.

2020 information, ranging from 46 MW to 300 MW. Two projects in Ohio currently under construction are the 320 MW Hardin Solar Energy project (two phases) being developed by Invenergy and the 200 MW Hillcrest Solar project being developed by Innergex. The first phase (150 MW) of the Hardin Solar Energy project was placed in operation earlier this year in 2021; however, due to its recent completion date, there are no sales that sold after its completion that can be analyzed in a paired sale analysis. For Hillcrest Solar, which is still under construction to our knowledge, there were approximately three home sales adjacent to the project boundary that sold between late January 2020 (start of construction) and the date of this report. Each of these sales sold during normal marketing time of 30-90 days on market and sold at list to sale price discounts of -2.2% to 12.6% (above list).

Ohio currently has 31 solar facilities in service that generate 112.8 MW of power, of which are five solar facilities that produce over 5 MW of power in Ohio in operation currently. We present each of the five solar facilities that produce over 5 MW of power (utility scale) and their descriptions on the following pages.



	Ohio Solar Farms Over 5 MW AC (	Utility-Scale)
Solar Farm County, State Capacity	Aerial Photo	Solar Farm Description
DG AMP Solar Bowling Green Wood County, OH 20 MW AC		This 20 MW AC solar farm is located in an outlying area and has no nearby surrounding homes. This solar farm does not qualify for a paired sale analysis.
DG AMP Solar Piqua Manier Miami County, OH 16 MW AC	Signal (continued of the continued of th	This 12.6 MW AC solar farm is located in the City of Piqua at the city limits near one story homes. We reviewed all of the immediately adjacent properties for recent sales after the construction of the solar farm in July 2019 and only found 1 valid transaction to study. However, the adjoining property that sold was not incorporated into the City of Piqua. In our search for similar homes away from the solar farm outside the City of Piqua limits, we did not find enough data points that occurred around the sale date of the adjoining property in order to prepare a reliable paired sale analysis. As such, this solar farm did not qualify for a paired sale analysis as of the report date.
Wyandot Solar Farm Wyandot County, OH 10 MW AC	Wymoto Comprise Augori	This 10 MW AC solar farm adjoins an airport property and has no adjacent or surrounding homes to study. This solar farm does not qualify for a paired sale analysis given the presence of the airport, an external influence, and no nearby homes to study.

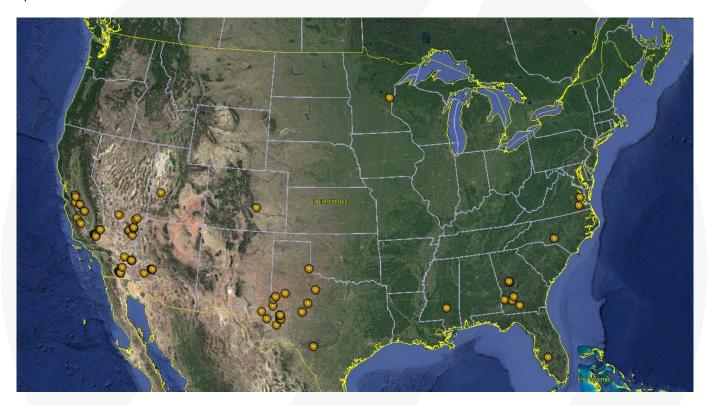


	Ohio Solar Farms Over 5 MW AC (Utility-Scale)								
Solar Farm County, State Capacity	Aerial Photo	Solar Farm Description							
Napoleon Solar I Henry County, OH 8 MW AC		Only one adjacent home sold since the announcement of this 8 MW AC solar farm. The home is a split-level with a backyard pool. This home style is an anomaly in the market and no other comparable control homes sales could be identified to study. The adjacent industrial building also is a secondary external influence on the local area. As such, this solar farm does not qualify for a paired sale analysis.							
DG AMP 1048 Wadsworth Medina County, OH 6.3 MW AC	16	This 6.3 MW AC solar farm is located in an outlying area near industrial uses and has no nearby surrounding homes. This solar farm does not qualify for a paired sale analysis as there are no surrounding homes to study.							



#### LARGE-SCALE SOLAR IN THE UNITED STATES

According to the U.S. Energy Information Administration (EIA) through June 2020, there were ±230 solar facilities in operation that generate more than 50 MW AC of power, and ±84 solar facilities in operation that generate more than 100 MW AC of power. A map illustrating existing solar farms with capacities greater than 100 MW is presented below (indicated by yellow suns), using data retrieved from the Energy Information Administration (EIA).



As of December 2020, there are currently no operating solar farms in Ohio with capacities greater than 25 MW, although new large, utility scale projects have been approved in Ohio and the surrounding states within the last 2 years, or are under construction. There are 7 unique solar power generation facilities that are planned for construction in Ohio, according to the EIA, that will produce 1,066 MW of power when in service, as of December 2020 information, ranging from 46 MW to 300 MW. Two projects in Ohio currently under construction are the 320 MW Hardin Solar Energy project (two phases) being developed by Invenergy and the 200 MW Hillcrest Solar project being developed by Innergex. The first phase (150 MW) of the Hardin Solar Energy project was placed in operation earlier this year in 2021; however, due to its recent completion date, there are no sales that sold after its completion that can be analyzed in a paired sale analysis. For Hillcrest Solar, which is still under construction to our knowledge, there were approximately three home sales adjacent to the project boundary that sold between late January 2020 (start of construction) and the date of this report. Each of these sales sold during normal marketing time of 30-90 days on market and sold at list to sale price discounts of -2.2% to 12.6% (above list).



To meet zoning and planning requirements, and/or to take advantage of certain incentive programs, several solar farms are built by the same developer around the same location, de facto functioning as one larger solar farm. Many of these solar facilities are located in California, with several located in Florida, Texas, Nevada, North Carolina, Arizona, Georgia and Utah. Additionally, these installations are typically located in outlying areas where site costs are lowest, and residential development and sales activity is minimal in these areas. While we have reviewed each for surrounding uses, the majority are not good candidates for a paired sales analysis since they were either recently constructed or surrounding development/sales activity was minimal.



#### SELECTION OF SITES AND REFINEMENT OF METHODOLOGY

Because of the lack of large existing utility-scale solar installations in Ohio, we expanded our analysis and reviewed other large solar farms in other states. We reviewed additional solar farms located in Ohio; however, they were not candidates for a paired sale analysis due to external factors or lack of adjoining sales.

Based on our previous assessment of solar development, we have studied established solar farms in the Midwest/South (one in Indiana, one in Minnesota, one in Michigan, one in Georgia, and two in Florida,) and the East (three in North Carolina and one in Virginia) because of their size and the way that soil conditions, climate, and topography contribute to property values and their potential for impact on property values in addition to the adjacent uses and development trends.

The selected solar sites in this analysis were considered based on their similarities in surrounding areas, size, and availability of arm's length adjoining property transaction data that were available for analysis. Of significance is the North Star Solar Farm located in Chisago County, Minnesota. This is a utility scale solar farm is located in a rural area surrounded by single family residences and agricultural land, similar to the proposed projects.

In total, we identified 11n solar farms to study with comparable sales where generally the only difference was the attribute under study: proximity to a solar farm.

Ownership and sales history for each adjoining property to an existing solar farm through the effective date of this report is maintained within our workfile. Adjoining properties with no sales data or that sold prior to the announcement of the solar farm were excluded from further analysis. Adjoining properties that sold in a non-arm's length transaction (such as a transaction between related parties, bank-owned transaction, or between adjacent owners) were excluded from analysis as these are not considered to be reflective of market price levels. Additionally, sales that occurred under other forms of duress or that required significant capital expenditures to cure deferred maintenance were also excluded. The adjoining properties that remained after exclusions ("Test Area Sales") were considered for a paired sale analysis.

The difference in price is considered to be the impact of the proximity to the solar farm. Two types of paired sales analyses were considered based on the availability of data:

- Comparing sales of adjoining properties prior to the announcement of the solar farm to sales of adjoining properties after announcement and subsequent development of the solar farm (a "Before and After Analysis").
- Comparing sales of adjoining properties after the announcement and subsequent development of the solar farm to sales of comparable properties that are locationally removed from their influence.

We have considered both types of paired sales analyses in this study. We performed three "Before and After Analyses," as defined above, for one solar farm in Indiana, one in Minnesota, and one in Florida. The remaining existing solar farms studied did not qualify for this Before and After Analysis due to lack of quantity of homogenous sale data. All ten solar farms qualified for the second type of paired sales analysis, which was comparing sales of properties locationally removed from the solar farm (Control Area) to sales of adjoining

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properties that occurred after the announcement and subsequent development of the solar farm project (Test Area).

We have found Control Area sales data through the local Multiple Listing Service (MLS) and other real estate broker databases and verified these sales through county records, conversations with brokers, the individual county's GIS services, and the county assessor's office. It is important to note that these Control Area Sales are not adjoining to any solar farm, nor do they have a view of a solar farm from the property. Therefore, neither the announcement nor the completion of the solar farm use could have impacted the sale price of these properties.

To make direct comparisons, the sale price of the Control Area Sales will need to be adjusted for market conditions to a common date. In this analysis, the common date is the date of the Adjoining Property Sale after the completion of the solar farm. After adjustment, any measurable difference between the sale prices would be indicative of a possible price impact by the solar farm, if any.

For the 11 existing solar farms studied, a summary of the analysis completed for each solar farm studied is presented on the following pages. Details of these analyses are retained within our workfile, and will be provided to the client for their review (or to a party of the hearing), after execution of a specific Non-Disclosure Agreement relating to our research and interviews.

We also noted that our impact study data and methodology have been previously reviewed by our peer in the feild – Kirkland Appraisals, LLC – as well as by the Solar Energy Industries Association (SEIA).



SOLAR FARM 1: NORTH STAR SOLAR FARM, CHISAGO COUNTY, MN

Coordinates: Latitude 45.486756, Longitude -92.884206

PINs: Multiple

Total Land Size: ±1,000 Acres

**Date Project Announced: 2014** 

Date Project Completed: October 2016

Output: 100 MW AC



#### **Overview and Surrounding Area:**

The North Star Solar Farm is located approximately four miles southeast of the City of North Branch in unincorporated Chisago County, near the intersection of Route 69 and Route 72. The solar farm was developed by Community Energy Solar in 2016 and is the largest solar farm in the Midwest. The solar farm features 440,000 solar panels and a power output capacity of 100 MW AC, which is enough to power 20,000 homes. The owner, North Star, LLC, has a 25-year purchase contract for the power produced by the project with Xcel Energy.



Chisago County lies on Minnesota's eastern border, abutting the western border of Wisconsin, across the Saint Croix River. The North Star Solar Farm is approximately 16 miles west of the border with Wisconsin and is just over one mile west of the Kost Dam public park and reservoir, a 28-acre park on the south branch of the Sunrise River.

#### **The Immediate Area:**

The North Star Solar Farm is surrounded by agricultural land to the north and west. To the south and east of the project there are several residential properties, some of which are nestled within the actual solar farm.

All of the adjacent land parcels to the solar farm are used for agricultural or residential purposes.

The solar farm has agricultural and deer fencing around parts of the project. Additionally, native vegetation and trees previously existed as a buffer along the frontage roads.

**Prior Use:** Agricultural use

#### **Real Estate Tax Information:**

Prior to development of the solar farm, in 2015, this ±1,000-acre site paid real estate taxes of \$37,250, annually. After the solar farm development, in 2017, real estate taxes increased to \$112,856, a 203 percent increase in tax revenue for the site.

PIN	Acres
Chisago County, MN	
09.00348.00	74.91
09.00349.00	74.30
09.00350.10	16.95
09.00351.10	68.01
09.00353.00	81.87
09.00354.00	121.84
11.00517.00	72.07
11.00528.00	66.42
11.00529.00	60.26
11.00726.00	40.55
11.00730.00	68.32
11.00731.00	160.83
11.00732.00	30.52
11.00732.10	10.00
TOTAL	946.85

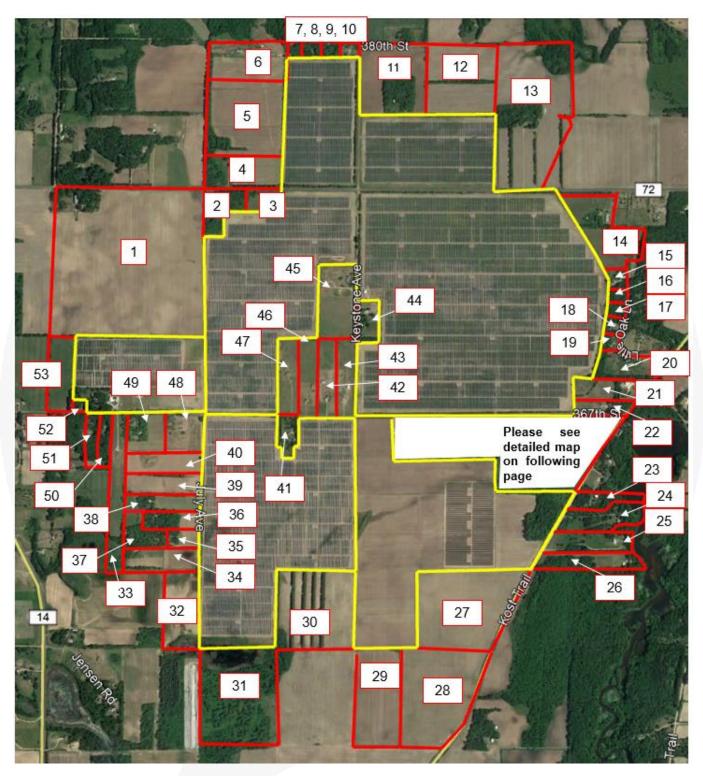
201	2015 Taxes		17 Taxes	Tax	
	Paid		Paid	Increase	
\$	2,806	\$	8,546	205%	
\$	2,818	\$	8,578	204%	
\$	644	\$	2,752	327%	
\$	3,260	\$	9,806	201%	
\$	3,114	\$	8,678	179%	
\$	4,578	\$	13,324	191%	
\$	3,382	\$	7,440	120%	
\$	1,460	\$	6,836	368%	
\$	1,506	\$	7,284	384%	
\$	1,010	\$	3,968	293%	
\$	3,426	\$	7,638	123%	
\$	3,598	\$	17,924	398%	
\$	788	\$	4,748	503%	
\$	4,860	\$	5,334	10%	
\$	37,250	\$	112,856	203%	

201	5 Assessed	201	7 Assessed	Value
	Value		Value	Increase
\$	198,800	\$	233,900	18%
\$	199,600	\$	234,800	18%
\$	45,600	\$	75,300	65%
\$	230,900	\$	268,400	16%
\$	220,500	\$	237,500	8%
\$	324,200	\$	364,700	12%
\$	194,400	\$	224,100	15%
\$	180,000	\$	210,000	17%
\$	168,700	\$	168,800	0%
\$	110,700	\$	140,700	27%
\$	315,700	\$	338,200	7%
\$	422,500	\$	469,100	11%
\$	84,900	\$	109,500	29%
\$	257,700	\$	290,100	13%
\$	2,954,200	\$	3,365,100	14%

#### **Adjoining Properties:**

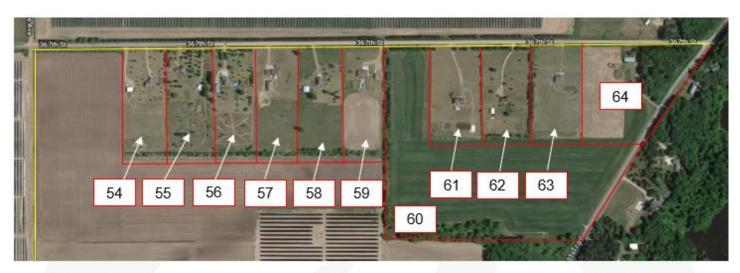
The maps on the following pages display the parcels that contain the solar farm (outlined in yellow). Properties adjoining the solar site (outlined in red) are numbered for subsequent analysis.





North Star Solar Farm - Adjoining Properties





North Star Solar Farm - Adjoining Properties

In reviewing Adjoining Properties to study in a Paired Sales Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

While assembling the solar development site, the developer of the solar farm acquired seven homes along 367<sup>th</sup> Street and nearby, Adjoining Properties 41, 42, 43, 44, 45, 46, and 47, which are surrounded by the solar arrays. According to conversations with the solar developer, they purchased the homes prior to development to provide interim housing for employees as the solar farm was under construction, or for potential use for the project area (which ultimately was not necessary). Per the developer the houses were purchased at an assemblage premium above their appraised values. After construction, the developer sold all seven homes at market prices, six to new buyers, and one, Adjoining Property 47, which was re-purchased by the original owner. This indicates that the development of the North Star Solar Farm did not deter transactions nor affect sale prices in the surrounding area.

Clifford Sheppeck, broker at Keller Williams Classic, was hired by Renewable Energy Asset Co, LLC, the solar farm developer, to market and sell the remaining five properties that the developer owned. We discussed these transactions with Mr. Sheppeck who indicated they all sold within two months, which was in line with the market.

In addition to the seven homes sold by the developer, we identified six other properties all which sold since the construction of the solar farm: Adjoining Properties 3, 10, 18, 38, 54 and 64. In all, a total of 13 identified Adjoining Properties have sold during or since the construction of the solar farm. These properties are discussed further in the following sections.

#### Properties Excluded from Paired Sales Analysis

Adjoining Property 3, located at 10009 375<sup>th</sup> Street, sold most recently in July 2019 for \$260,000, or \$172.41 per square foot of finished living area. This property is improved with a modular/pre-fabricated home in the rambler style, with one story and a basement with a partial walk-out portion, on just over five acres of land. During our search for similar homes that sold away from the solar farm, we did not locate enough market transactions of



homes around the time of the most recent sale of Adjoining Property 3 with similar construction and land size to yield reliable conclusions in a paired sale analysis. Although, this home, located at 10009 375th Street, sold most recently in July 2019 for \$260,000 it had also sold in March 2016 for \$219,900, during construction of the solar farm. The home also sold in March of 2005 for \$163,000. We have excluded the 2016 sale from paired sale analysis because we cannot separate any influence from construction on the sale price at that time. However, we can calculate the average monthly appreciation from 2005 to 2019 (+0.27 percent) which is higher than the average monthly home price appreciation in the same zip code of 55056 according to the FHFA Housing Price Index (discussed in more detail later), which was 0.0 percent over the same period. It is evident that the home value increased at a higher rate than homes in the local area over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm. The buyer's broker in the 2019 sale, Gail Reinhard, noted that the buyer had no concerns or issues with the home's proximity to the solar farm and the price paid was market oriented.

Adjoining Property 10, located at 10270 380<sup>th</sup> Street, sold in June 2018 for \$163,800, or \$143.18 per square foot of finished living area. The property is improved with a small, single-story, modular/pre-fabricated home with no basement, which is atypical for the area. Most the homes in the area, while similar in gross living areas, are one-story, single-family homes with basements, many with some level of finished square footage below grade. We conducted a search in the area for comparable modular homes without basements but did not find sufficient data yield reliable conclusions in a paired sale analysis. Additionally, this home does not appear to have been listed on the local MLS as we could not identify a broker contact for the most recent sale. We have reached out to the buyer and seller to confirm the nature of the transaction, but as of this writing, we have not made contact. We note that the home sold previously in July 2004; however, county sale records indicate the 2004 sale was between related parties which disqualifies it as an arm's length transaction. Due to limited sales in the area to categorize as Control Area Sales, Adjoining Property 10 was excluded from further analysis.

Adjoining Property 22, located at 11210 367<sup>th</sup> Street, sold in March 2015 for \$280,000, or \$74.55 per square foot of finished living area. It is a rambler built in 1974 with a full finished basement and has some ancillary farm buildings on a 5.2 acre site. This property also sold previously in December 2003 for \$107,000 before the solar farm was constructed. We have excluded the 2015 sale from paired sale analysis because we cannot separate any influence from construction on the sale price at that time. However, we can calculate the average monthly appreciation from 2003 to 2015 (+0.71 percent) which is higher than the average monthly home price appreciation in the same zip code of 55056 according to the FHFA Housing Price Index (discussed in more detail later), which was -0.1 percent over the same period. It is evident that the home value increased at a higher rate than homes in the local area over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm.

Adjoining Property 38, located at 36438 July Avenue, sold during construction of the solar farm in October 2015 for \$225,000, or \$117.68 per square foot of finished living area. It is a home designed specifically as a passive solar home, taking advantage of the same renewable energy potential of the North Star solar farm. The property is set back behind five acres of agricultural land and is secluded behind trees and operates as a mixed-use "hobby farm." This is a highly atypical use with no comparable sales and it sold during construction; we have excluded the 2015 sale from paired sale analysis because we cannot separate any influence from construction

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on the sale price at that time. We note that the home sold previously in November 2003; however, we could not prepare a Before and After analysis utilizing this prior transaction as the most recent sale was marketed as a passive solar home. For these reasons, Adjoining Property 38 was excluded from further analysis.

Adjoining Property 41, located at 10095 367<sup>th</sup> Street, is subject to an existing 30-year lease for the southern 6.24 acres of the parcel for solar panels in the North Star solar farm. Because the property is a participating parcel in the solar farm, and due to the additional rental income from the land, the June 2017 sale of this property for \$336,900, or \$135.48 per square foot of finished living area, was excluded from a paired sales analysis. The sale of this property in May 2016 was to the solar developer for an above appraised value of \$365,000, which was an atypically motivated transaction. Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 43, located at 10254 367<sup>th</sup> Street, sold for \$335,000 in July 2017, for \$191.21 per square foot of finished living area, and is a two-story home with an atypical floor design. Most of the homes in the area, while having similar gross living areas, are one-story, single-family homes with basements. We conducted a search in the area for comparable above-grade, two-story homes, but did not find sufficient sales data. Mr. Sheppeck was the listing broker for this property and confirmed its atypical nature. He indicated that it sold at a price that was in-line with the market even though two-story homes are considered to be rare in the area. Due to limited comparably designed sales in the area, Adjoining Property 43 was excluded from a paired sales analysis. The prior sale of this property was to the solar developer for assemblage during construction for \$535,000, an above market price, in July 2016. Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 44, located at 37083 Keystone Avenue, sold for \$257,000, or \$157.86 per square foot of finished living area, in August 2017 and is a one-story rambler style home with an inferior quality of construction and an inferior basement. Sale listing materials indicated deferred maintenance. Most comparable sales either have finished or walk-out basements and average to above-average construction and condition quality. Due to limited comparable sales for this property, Adjoining Property 44 was excluded from a paired sales analysis. The prior sale of this property was in October 2016, to the solar developer for assemblage, for \$302,500. Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 45, located at 37206 Keystone Avenue, sold in June 2017 for \$290,000, or \$149.48 per square foot of finished living area, from the solar farm developer. The property is a split-entry home on over 20 acres. The home features an attached 3-car garage, a detached two-car garage with a finished second story, and a fenced in-ground pool. The County Assessor classified this property as agricultural due to its large acreage. Because this home is atypical (large acreage and pool) there were no comparable sales in the area and Adjoining Property 45 was excluded from further analysis. This home was previously purchased by the solar farm developer in July 2016 for \$450,000, an above market price, for assemblage during solar farm construction. After construction was complete, the home was sold in 2017 at a market-oriented price, in an average number of days listed on the Multiple Listing Service (MLS). Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.



Adjoining Property 47, located at 10090 367<sup>th</sup> Street, most recently sold in March 2018 for \$302,500, or \$127.53 per square foot of finished living area, from the solar farm developer. This home was previously purchased by the solar farm developer in August 2016 for \$360,800, an above market price, for assemblage during solar farm construction. According to the broker, Cliff Sheppeck, the original owner leased the house back from the developer after the sale, never moved out, and was hired to do maintenance and upkeep on the other six houses the developer purchased in the area. When the developer no longer needed the property, he sold it back to the original owner in 2018 at a market-oriented price. Because of the relationship between the parties in 2018 and 2016, we have not included it in a Paired Sales Analysis nor a Before and After analysis.

Adjoining Property 64, located at 36640 Kost Trail, sold in December 2019 for \$310,000, or \$139.70 per square foot of finished living area. The property is an above-grade, two-story home and has a partially finished basement, on over 8 acres of land. The property also includes a detached 2-car garage and a pole barn. Jeff Turbeville, broker at Edina Realty Inc., explained this two-story home style is atypical in the area and not enough control sales could not be found in our search for a credible paired sales analysis; thus, Adjoining Property 64 was excluded from further analysis.

#### Properties Included in Paired Sales Analysis

Adjoining Property 18, located at 37096 Little Oak Lane, sold in April 2017 for \$289,000, or \$119.82 per square foot of finished living area. The home is a rambler style, one-story, home with a finished walk-out basement on a 2.07-acre parcel. The improvements on this property are located approximately 225 feet from the nearest solar panel. The buyer's broker, Amy Lamb, noted that the home was in good shape and had been on the market for two years because the seller would not lower the price to market levels during previous listings. In the summer, Lamb noted, the solar panels were barely visible from the back of the property, but in winter they were visible. Lamb asked the buyers if the solar panel view would be a problem and their opinion was that the neighboring solar panels meant no other development that created traffic or noise would be built to disturb them. This home qualified for a paired sales analysis and was studied in Group 2, as detailed on subsequent pages. We have also studied this property in a Before and After analysis later in this report as it also sold in 2006, prior to construction of the North Star solar farm.

Adjoining Property 42, located at 10200 367<sup>th</sup> Street, sold in November 2017 for \$330,000, or \$151.93 per square foot of finished living area. The home is a split-level style house on 9.30 acres. The improvements on this property are approximately 393 feet from the nearest solar panel. This home qualified for a paired sales analysis and was studied in Group 1, as detailed on subsequent pages. This home was previously purchased by the solar farm developer in July 2016 for \$387,900, an above market price, for assemblage during solar farm construction. After construction was complete, the home was sold in 2017 at a market-oriented price, in an average number of days listed on the Multiple Listing Service (MLS). Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 46, located at 10132 367<sup>th</sup> Street, sold most recently in December 2020 for \$415,000, or \$196.87 per square foot of finished living area. The home is a split-level style house on 9.31 acres. The home features an attached 3-car heated garage, an 816 square foot detached heated garage, and a 1,400 square foot



outbuilding. The improvements on this property are approximately 330 feet from the nearest solar panel. This home also sold in October 2017 for \$333,000 from the solar developer who had purchased it in September 2016 for \$387,900, an above market price, for assemblage during solar farm construction. After construction was complete, the home was sold in 2017 at a market-oriented price, in an average number of days listed on the Multiple Listing Service (MLS). This home qualified for a paired sales analysis and was studied in Group 1 (2017 sale), and in Group 3 (2020 sale), as detailed on subsequent pages. Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 54, located at 10009 375<sup>th</sup> Street, sold in July 2019 for \$260,500, or \$137.83 per square foot of finished living area. The home is a is a split-level style house on 5.0 acres. The improvements on this property are located approximately 352 feet from the nearest solar panel. This home qualified for a paired sales analysis and was studied in Group 1, as detailed on subsequent pages. We have also studied this property in a Before and After analysis later in this report as it also sold in 1999, prior to construction of the North Star solar farm.

#### Paired Sales Analysis

#### **Group 1**

We analyzed three split-level homes that sold between 2016 and 2017 that were located adjacent to the North Star solar farm.

North Star Solar										
Test Area Sales - Group 1										
Adj. Property # Address Sale Price Site Size (AC) Beds Baths Year GLA Sale Date						Price PSF				
52	10505 367th St	\$260,500	5.00	3	2	1999	1,890	Aug-16	\$137.83	
42	10200 367th St	\$330,000	9.30	4	3	2003	2,172	Nov-17	\$151.93	
46	10132 367th St	\$333,000	9.31	4	3	2001	2,108	Oct-17	\$157.97	
Median		\$330,000	9.30	4	3	2001	2,108	Oct-17	\$151.93	

Throughout our analysis we have relied on square footage data from the Chisago County Assessor's office for home sizes. We have included above-grade and finished below-grade square footage in our calculations as the market in this area considers finished square feet on every level to be livable. Split-level homes and those with basements or walkout basements are prevalent in this area. We note that the square footage for Adjoining Property 42 is shown on the MLS real estate listing from 2017 as being 2,350, we have utilized the Assessor's livable square footage of 2,172 in our analysis.

We analyzed 11 Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sales, that were not located in close proximity to the solar farm.

The Control Area Sales for Group 1 are split-level homes with either 3 or 4 bedrooms and 1.5 to 4 bathrooms. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions.

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When adjusting sale prices for market conditions (time between date of Test Area Sale and Control Area Sale date) throughout this analysis we have used regression analysis to identify the appropriate monthly market conditions adjustment. We utilized the Federal Housing Finance Agency House Price Index (FHFA HPI) for the zip code 55056, the zip code of all Test Area and Control Area Sales, for the compounded monthly rate of appreciation. The FHFA HPI is a broad measure of the movement of single-family house prices. The FHFA HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or refinancings on the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. 11 We adjusted Group 1 Control Area Sales using the FHFA HPI for the period from 2016 through 2017.

The results of our analysis for Group 1 are presented below.

CohnReznick Paired Sale Analysis North Star Solar Group 1							
No. of Sales	Adjusted Median Price Per SF						
Test Area Sales (3)	Adjoining solar farm	\$151.93					
Control Area Sales (11)	No: Not adjoining solar farm	\$139.50					
Difference between Unit Pri Adjusted Median Unit Pri	8.91%						

We note a somewhat large positive difference in adjusted median price per square foot between the median of the Test Area Sales and the Control Area Sales. The price differential is likely attributable to the larger parcel sizes of the Test Area Sales, which range from 5.00 acres to 9.31 acres. The Control Area Sales home sites range from to 2.29 to 7.10 acres, with a median of 5.0 acres. Control Area Sales with lot sizes that bracketed the Test Area Sales on the high side did not transact during the period studied but the properties are considered comparable. The sale prices of Adjoining Properties in Group 1 were not negatively impacted by the homes' proximity to the North Star solar farm.

We note that the median unit sale price of the most recent sales of each of the excluded adjoining properties identified previously is \$141.44 per square foot. As indicated above, the included Test Area Sales have a median unit price of \$151.93 per square foot. Inclusion of the excluded adjoining property sales would not have made a conclusive impact on the conclusions of the paired sale analysis.

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<sup>11</sup> https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx

**Group 2** 

We analyzed Adjoining Property 18, a single-story, rambler style home that sold in 2017.

North Star Solar Test Area Sale - Group 2									
Adj. Property #	Address	Median Sale Price	Median Site Size	Median Beds	Median Baths	Median Year Built	Median GLA (SF)	Median Sale Date	Median Price PSF
18	37096 Little Oak Ln	\$289,000	2.07	4	3.0	2001	2,412	Apr-17	\$119.82

We analyzed 10 Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 18 sits on a somewhat small lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 2,314 square feet to 3,371 square feet of finished living area (including finished basements), the parameters of our search for Control Area Sales were widened to include lot sizes between 1 and 10 acres.

The Control Area Sales for Group 2 are rambler style homes with 4 bedrooms and 2 to 4 bathrooms on less than 10-acre parcels. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2016 through 2018.

CohnReznick Paired Sale Analysis North Star Solar Group 2							
No. of Sales	Adjusted Median Price Per SF						
Test Area Sales (1)	Adjoining solar farm	\$119.82					
Control Area Sales (10)	No: Not adjoining solar farm	\$118.72					
Difference between Unit Pr Adjusted Median Unit Price	0.92%						

**Noting no significant price differential,** it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 2.



#### **Group 3**

Adjoining Property 46 was analyzed as a 2017 sale in Group 1 and sold again most recently in December 2020. While this sale is not yet published in the Chisago County Assessor's data, the sale has been recorded in the public record and the MLS.



Photo of 10132 367th Street (Adjoining Property 46) with view of solar arrays from 2020 MLS listing

North Star Solar									
		Te	st Area Sale	- Group	3				
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median GLA (SF)	Median Sale Date	Median Price PSF
46	10132 367th St	\$415,000	9.31	4	3.0	2001	2,108	Dec-20	\$196.87

We analyzed six Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.



The Control Area Sales for Group 3 are split-level style homes with 4 bedrooms and 2 or 3 bathrooms on one to ten acre parcels. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2018 through 2019 (the most recent data available). The results of our analysis are presented below.

CohnReznick Paired Sale Analysis North Star Solar Group 3								
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF						
Test Area Sale (1)	Adjoining solar farm	\$196.87						
Control Area Sales (6)	No: Not adjoining solar farm	\$139.60						
Difference between Unit Pr Adjusted Median Unit Pric	41.02%							

We note that the sale price of the 2020 sale of Adjoining Property 46 is the highest for this home type (split-level) in all the County Assessor data from 2016 to 2020 for North Branch Township. However, the selling broker, Candace Rindahl, remarked that the price was market for the area at the time of sale. We see this in a study of the rate of appreciation over the course of three years between the prior sale and most recent sale. Adjoining Property 46 appreciated at a faster rate than the local area, as seen in the following table.

Test Area Sale									55056 Zip Code FHFA Housing Price Index Change		
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Dato	Prior Sale Price	Total Appreciation	Monthly Appreciation Rate	Total Appreciation	Monthly Appreciation Rate
AP 46	10132 367th St	9.31	2,108	12/20/20	\$415,000	10/20/17	\$333,000	24.62%	0.58%	17.43%	0.42%

We note a somewhat large positive difference in adjusted median price per square foot between the Test Area Sale and the Control Area Sales. The most comparable Control Area Sale, Control Area Sale 5 (6836 410<sup>th</sup> Street), sold for an adjusted sale price per square foot of \$182.74 a difference of 7.2 percent to the unit sale price of the Test Area Sale. We find that on a macro and micro level of analysis, the sale price of Adjoining Property 46 (Group 3) was not negatively impacted by its proximity to the North Star solar farm.

The differential between the Test Sale and the Control Sales is much higher than any of our other studies; we have considered this to be an outlier. While the indication shows that the adjacent solar farm has not negatively impacted the property value for this home, we have considered that this house has "set the market" for this kind



of property type (home style, age and acreage) – we believe that this differential will likely stabilize in the near future as other homes catch up to the appreciation shown by Adjoining Property 46. Thus, we have not included this Group in the collection of impact studies in our conclusion.



# A Repeat Sales Study (Before and After Construction of the Solar Farm Analysis)

In a 2017 study conducted by Chisago County Assessor John Keefe, Keefe analyzed the sales of 15 parcels alongside or near the North Star Solar Farm that sold between January 2016 and October 2017. Based on trends exhibited by 750+ sales throughout the county, Keefe concluded that the homes, located on 375<sup>th</sup>, 367<sup>th</sup>, Keystone, Little Oak, Lincoln Trail, and Kost Trail were all "in excess of assessed" and reported that "valuation hasn't suffered."<sup>12</sup>

Considering Keefe's 2017 study, we conducted a supplemental analysis in which we compared the sale prices of the three homes sold in Group 1 that are adjacent to the North Star Solar Farm (Test Area Sales Group) to the previous sale price of the home. commonly known as a "Repeat Sales Analysis" utilizing a sale and resale of the same property. These sales reflect the average site size, home type, and home size of properties in the surrounding area. In our comparison for each property analyzed, we calculated the total appreciation between each sale, the number of months that elapsed between each sale, and determined the monthly appreciation rate for the property. We then compared the extracted monthly appreciation rates to the change in the Federal Housing Finance Agency (FHFA) Home Price Index in Minnesota's 55056 zip code (where the studied homes are located) over the same period. The index for zip codes is measured on a yearly basis and is presented to the right.

We conducted the same analysis for seven single-family properties that are not within proximity to the North Star Solar Farm, that were within the Group 1 Control Area Sales. The tables on the following page present this study.

There was one home in the Test Area Sales group that experienced negative appreciation (Adjoining Property 18, 37096 Little Oak Lane) from when it sold first in 2006 to the most recent sale in 2017. There was also one home in the Control Area Sales group that experienced negative appreciation (G1-2, 5183 366<sup>th</sup> Street) from when it sold first in 2007 to the most recent sale in 2016. During the calendar years of 2005, 2006 and 2007, housing prices in the United States were reaching their peak. In 2006 the HPI reached 251.83, a record at that time. Post-recession homes

55056 Zip Code - Housing Price Index Change (Year Over Year) Not Seasonally Adjusted

Year	Annual Index	Annual Change (%)	Compounded Monthly Change (%)
1991	100.00		
1992	101.15	1.15%	0.10%
1993	105.00	3.81%	0.31%
1994	110.54	5.28%	0.43%
1995	121.51	9.92%	0.79%
1996	127.27	4.74%	0.39%
1997	134.29	5.52%	0.45%
1998	141.08	5.06%	0.41%
1999	149.86	6.22%	0.50%
2000	169.13	12.86%	1.01%
2001	187.18	10.67%	0.85%
2002	200.83	7.29%	0.59%
2003	212.82	5.97%	0.48%
2004	226.83	6.58%	0.53%
2005	246.73	8.77%	0.70%
2006	251.83	2.07%	0.17%
2007	243.35	-3.37%	-0.29%
2008	223.07	-8.33%	-0.72%
2009	196.72	-11.81%	-1.04%
2010	179.99	-8.50%	-0.74%
2011	163.09	-9.39%	-0.82%
2012	155.38	-4.73%	-0.40%
2013	165.02	6.20%	0.50%
2014	175.59	6.41%	0.52%
2015	187.02	6.51%	0.53%
2016	203.03	8.56%	0.69%
2017	220.28	8.50%	0.68%
2018	235.98	7.13%	0.58%
2019	248.44	5.28%	0.43%
2020	258.67	4.12%	0.34%



<sup>&</sup>lt;sup>12</sup> https://www.cleanenergyresourceteams.org/chisago-county-boards-real-estate-update-shows-solar-has-no-impact-property-values

prices, after 2008 did not recover to the same or higher levels until 2019 and 2020. When the homes sold in 2017 and 2016, respectively, the housing market had not fully recovered in the area and the negative appreciation tracks with the overall market conditions, illustrated in the red boxes in the table on the prior page.



	Test Area Sales Group										55056 Zip Code - FHFA Housing Price Index			
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Prior Sale Date	Prior Sale Price	Total Appreciation	Months Elapsed Between Sales	Monthly Appreciation Rate	Index Level During Year of Most Recent Sale	Prior Sale Year Index Level	Total Appreciation	Monthly Appreciation Rate
AP 54	10505 367th Avenue	5.00	1,890	8/19/2016	\$260,500	4/30/1999	\$123,294	111.28%	208	0.36%	203.03	149.86	35.48%	0.15%
AP 22	11210 367th Street	5.20	3,756	3/31/2015	\$280,000	12/19/2003	\$107,000	161.68%	135	0.71%	187.02	212.82	-12.12%	-0.10%
AP 18	37096 Little Oak Lane	2.10	2,412	4/11/2017	\$289,000	1/27/2006	\$308,000	-6.17%	134	-0.05%	220.28	251.83	-12.53%	-0.10%
AP 3	10009 375th Street	5.10	1,040	7/12/2019	\$260,000	3/4/2005	\$163,000	59.51%	172	0.27%	248.44	246.73	0.69%	0.00%
	Median - Test Area Sales	5.05	2,151		d			A SERVICE CONTROL OF CONTROL OF		0.32%				0.02%

				Control A	Area Sales Gro	oup					55056 Zip	Code - FHF	A Housing Pr	ice Index
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Prior Sale Date	Prior Sale Price	Total Appreciation	Months Elapsed Between Sales	Monthly Appreciation Rate	Index Level During Year of Most Recent Sale	Prior Sale Year Index Level	Total Appreciation	Monthly Appreciation Rate
G1-1	10589 Wilcox Road	5.00	1,900	7/6/2016	\$262,500	9/26/2007	\$223,700	17.34%	105	0.15%	203.03	243.35	-16.57%	-0.17%
G1-2	5183 366th Street	2.29	1,530	7/28/2016	\$227,708	4/13/2007	\$207,000	10.00%	112	0.09%	203.03	243.35	-16.57%	-0.16%
G1-3	4359 Elk Court	2.50	1,970	1/20/2017	\$263,000	11/25/1998	\$175,365	49.97%	218	0.19%	220.28	141.08	56.14%	0.20%
G1-4	39088 More Ferry Road	5.00	1,838	1/27/2017	\$229,000	9/29/2005	\$185,000	23.78%	136	0.16%	220.28	246.73	-10.72%	-0.08%
G1-7	4737 377th Street	2.50	2,002	6/28/2017	\$230,000	7/20/1999	\$138,400	66.18%	215	0.24%	220.28	149.86	46.99%	0.18%
G1-8	8628 380th Street	5.00	1,842	7/6/2017	\$275,000	4/23/2010	\$203,000	35.47%	86	0.35%	220.28	179.99	22.38%	0.23%
G1-9	6417 360th Street	5.00	2,346	7/7/2017	\$325,009	5/16/2008	\$270,000	20.37%	110	0.17%	220.28	223.07	-1.25%	-0.01%
	Median - Control Area Sales	5.00	1,900							0.17%				-0.01%



Most home sites outside of a subdivision in this area are within the 2.00- to 5.00-acre range, as shown in the Control Area Sales table on the prior page. The median gross living area for each group differs by less than 50 square feet of living area. The analysis described in this section, however, does not require us to make adjustments to the sales as we are only evaluating the difference in appreciation rates between a sale and resale of the same property.

As mentioned earlier in the report, Adjoining Property 3, (10009 375th Street), sold most recently in July 2019 for \$260,000 and also sold in March 2016 for \$219,900, during construction of the solar farm. The home sold first in 2005 for \$163,000. We have excluded the 2016 from our analysis because we cannot separate any influence from solar farm construction on the sale price at that time.

#### Conclusion

When compared to the FHFA home price index for the local zip code, the median monthly appreciation rate of the Test Area Sales group and the Control Area Sales group both outperformed the average for the zip code, as depicted in the far-right column in the tables on the prior page. As such, we concur with Assessor Keefe's conclusion that there does not appear to be a consistent detrimental impact on properties adjacent to the North Star Solar Farm.



SOLAR FARM 2: INNOVATIVE SOLAR 42, BLADEN AND CUMBERLAND COUNTIES, NC

Coordinates: Latitude 34.847627, Longitude -78.877360

Cumberland County PIN: 0339-67-3814

Bladen County PINs: 033900553698, 033900751483, 033900658763

Total Land Size: 414 acres

Date Project Announced: May 2014

Date Project Completed: September 2017

Output: 71 MW AC



Aerial imagery retrieved from Google Earth

# **Overview and Surrounding Area:**



Innovative Solar Farm 42 was developed by Innovative Solar Systems and became operational in September 2017. There are over 271,000 solar arrays on the farm that can generate power for approximately 12,000 homes.

Innovative Solar Farm 42 is located in unincorporated Bladen and Cumberland Counties, in North Carolina, approximately 17 miles south of Fayette, North Carolina and 21 miles north of Elizabethtown, North Carolina. The county line bisects the solar farm, with Cumberland County on the north side and Bladen County on the south side. Innovative Solar Farm is located just south of County Line Road in Cumberland County and approximately one mile west of North Carolina Highway 87.

<u>The Immediate Area:</u> The solar farm is surrounded by residential land to the north, residential and forest land to the west, and agricultural and forest land to the south and east.

<u>Landscaping:</u> The solar farm is buffered from the residences along County Line Road with a chain link fence, and tree plantings. The solar farm is clearly visible.

Prior Use: Agricultural use

**Real Estate Tax Info:** The chart below shows the increase from 2017 (before construction) to 2018 (after construction) in the assessed value of the parcels and the total real estate taxes.

PIN	Acres
Cumberland County, NC	
0339-67-3814	261.39
Bladen County, NC	
33900553698	82.48
33900751483	17.92
033900658763	52.20
TOTAL	413.99

	017 Taxes 2018 Taxes Paid Paid			Tax Increase		
\$ 5,263		\$ 37,699		616%		
\$	920	\$	947	2.96%		
\$	234	\$	241	2.96%		
\$	\$ 622		640	2.96%		
\$	7,039	\$	39,527	462%		

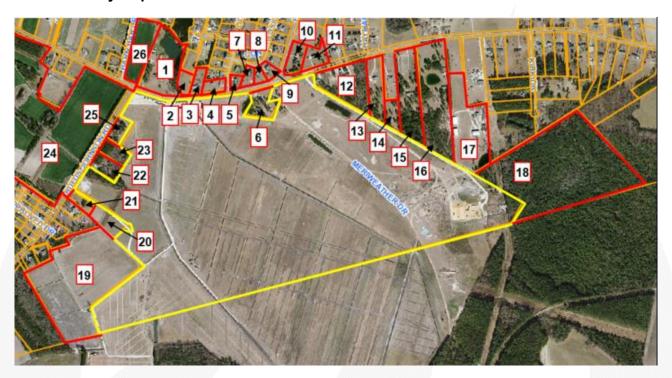
201	7 Assessed Value Value			Value Increase
\$	541,500	\$	3,920,850	624%
\$ \$ \$	108,870 27,690 73,600	\$ \$	108,870 27,690 73,600	0.00% 0.00% 0.00%
\$	751,660	\$	4,131,010	450%

#### Paired Sale Analysis:

We found two Adjoining Properties that qualified for a paired sales analysis: Adjoining Property 11 and Adjoining Property 2. Adjoining Property 2 was a speculative construction home built after the completion of the solar farm (see further discussion in the Solar Farm Factors in Harmony of Use section). The map on the following page displays the parcels adjoining to the solar farm panels (outlined in red), these parcels are numbered for subsequent analysis. Note, that the GIS map views do not have updated aerial imagery that display the solar panels in the image on the following page.



# **Cumberland County Map**



Innovative Solar 42 - Adjoining Properties



# **Bladen County Map**



Innovative Solar 42 - Adjoining Properties



### **Group 1**

Adjoining Property 11 was considered for a paired sales analysis, and sold during the construction period of the solar farm. The property was analyzed as a single-family home use.

The Control Area Sales were 1-story homes, with three bedrooms and two or three bathrooms with comparble sizes that sold within a reasonable time frame. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Innovative Solar 42 – Group 1e are presented below.

CohnReznick Paired Sale Analysis Innovative Solar 42 Group 1										
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF								
Test Area Sales (1)	Adjoining solar farm	\$107.09								
Control Area Sales (7)	No: Not adjoining solar farm	\$100.18								
Difference between Unit Pr Adjusted Median Unit Pri		6.91%								

The Test Area Sale sold after 71 days on market (2-3 months), while the Control Area Sales ranged from 1 day on market to 175 days on market (0-6 months), with a median of 116 days on market. We note <u>no negative</u> <u>marketing time differential.</u>

<u>Noting no negative price differential</u>, with the Test Area Sale having a higher unit sale price than the median adjusted unit sale price of the Control Area Sales, it does not appear that the Innovative Solar 42 energy use had any negative impact on adjacent property values.



### Group 2

Adjoining Property 2 was considered for a paired sales analysis, and sold after completion of the solar farm. We discussed this sale with the listing broker, Kevin Grullon, who said the solar farm did not impact the sales price nor the marketing time.

The Control Area Sales were 2-story homes, with three and four bedrooms and two to four bathrooms with comparble sizes that sold within a reasonable time frame. We excluded sales that were bank-owned, and those between related parties. For Adjoining Property 2, we analyzed seven Control Area Sales.

Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Innovative Solar 42 – Group 2 are presented below.

CohnReznick Paired Sale Analysis Innovative Solar Group 2										
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF								
Test Area Sales (1)	Adjoining solar farm	\$111.77								
Control Area Sales (7)	No: Not adjoining solar farm	\$105.34								
	Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales									

The Control Area Sales ranged from 13 days on market to 225 days on market (0-8 months), with a median of 46 days on market. The Test Area Sale sold after 153 days on market (3-4 months) and it was listed during construction, which explains the above average time on market since closing can only occur after the home had been completed.

**Noting no negative price differential**, with the Test Area Sale having a higher unit sale price than the median adjusted unit sale price of the Control Area Sales, it does not appear that the Innovative Solar 42 energy use had any negative impact on adjacent property values.



SOLAR FARM 3: RUTHERFORD FARM, RUTHERFORD COUNTY, NC

Coordinates: Latitude 35.257778, Longitude -81.830560

**PIN:** 1556-31-0185

Total Land Size: 489 acres

Date Project Announced: November 24, 2015

Date Project Completed: December 2016

Output: 61 MW AC



Aerial imagery retrieved from Google Earth

# **Overview and Surrounding Area:**

The Rutherford Farm Solar use is located in unincorporated Rutherford County, North Carolina. The solar farm was developed by Cypress Creek Renewables and became operational in December 2016. Southern Power and Turner Renewable Energy purchased the solar facility on July 8, 2016. The solar farm has over 289,000 solar modules that can generate power for approximately 12,000 homes.



The Rutherford Farm solar use is approximately 7 miles southeast of Forest City, in Rutherford County, in southwestern North Carolina. The solar facility is situated approximately 3 miles northeast of the intersection of Chase High Road and US 221, a major thoroughfare that traverses the county.

#### **The Immediate Area:**

Surrounding land uses consists of residential and forest land to the north, forest and commercial to the east, vacant and forest land to the south. All of the adjacent land parcels to the solar farm are used for agricultural or residential purposes.

The solar farm has a hedge buffer along portions of the farms where the residential development is closest. Along all solar panels areas adjacent to residential, a row of trees buffers the view of the panels.

## Prior Use: Wooded

### **Real Estate Tax Information:**

Prior to development of the solar farm, the assessed value of the property was \$466,200 and ownership paid \$3,156 in taxes. In 2018, after the completion of the solar farm, the assessed value of the solar farm property increased to \$1,075,800 and taxes increased to \$7,391, a 131 percent increase in tax revenue.

PIN	Acres
Rutherford County 1556-31-0185	488.84
TOTAL	488.84

 6 Taxes Paid	20	18 Taxes Paid	Tax Increase		
\$ 3,203	\$	7,391	131%		
\$ 3,203	\$	7,391	131%		

2016	Assessed Value	201	8 Assessed Value	Value Increase		
\$	466,200	\$	1,075,800	131%		
\$	466,200	\$	1,075,800	131%		

#### Paired Sale Analysis:

In reviewing adjoining properties to study in a Paired Sale Analysis, seven properties and sales were considered in total but six were eliminated from further consideration as discussed below.

The map on the following page displays the Adjoining Properties (outlined in red) to the solar farm parcel (outlined in yellow). Properties adjoining this parcel are numbered for subsequent analysis.







Rutherford Farm Solar - Adjoining Properties



Five Adjoining Properties (21, 22, 36, 56, and 57) were eliminated from further consideration because they were sales with no recorded sales value or property transfers in off-market transactions. Adjoining Property 2 was a transfer between related parties. Adjoining Property 55 sold in October 2020; however, this property is a duplex with one two-bedroom unit rented. We were not able to locate sales of other duplex properties in the surrounding area that are comparable to the property. As additional duplex sales occur, we will monitor and generate a paired sale analysis for this property at a later date.

We found one Adjoining Property that qualified for a Paired Sale analysis. Adjoining Property 46, the Test Area Sale, was considered for a paired sales analysis. The property was analyzed as a single-family home use. It should be noted that this sale occurred after announcement but prior to construction of the solar farm. We spoke with the selling broker for this property, Brent Washburn, who confirmed that the solar farm had not been constructed at the time of sale, and <u>said the announcement had no impact on the sale.</u>

Adjoining Property 46 was considered for a paired sales analysis, and we analyzed this properties as single-family home use. The improvements on this property are located 139 feet to the nearest solar panel.

	Test Area Sale Rutherford Farm Solar												
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF				
46	434 Ferry Rd	\$85,000	0.41	3	2.0	1977	1,590	Jan-16	\$53.46				

We analyzed six Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages, use that were not located in close proximity to the solar farm, that also sold within a reasonable time frame from the median sale date of the Test Area Sale. The Control Area Sales are one-story homes with 3 bedrooms and one to two bathrooms. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression to identify the appropriate monthly market conditions adjustment. The results of our analysis for the Rutherford Farm solar facility are presented on the next page.



CohnReznick Paired Sale Analysis Rutherford Farm Solar								
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF						
Test Area Sales (1)	Adjoining solar farm	\$53.46						
Control Area Sales (6)	No: Not adjoining solar farm	\$52.49						
Difference between Unit Pr Adjusted Median Unit Pri	1.85%							

<u>Noting no significant price differential</u>, with the Control Area Sales having a slightly lower median unit sale price than the unit sale price of the Test Area Sale, it does not appear that the Rutherford Farm Solar energy use had any negative impact on adjacent property values.



SOLAR FARM 4: DTE'S LAPEER SOLAR PROJECT, LAPEER, MICHIGAN

Coordinates: Latitude 43.0368219316, Longitude -83.3369986251

PINs: L20-95-705-050-00, L20-98-008-003-00

Owner of Record: DTE Electric Company & City of Lapeer

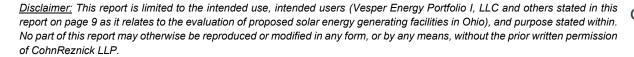
Total Land Size: ±365 Acres

**Date Project Announced: 2016** 

Date Project Completed: May 2017

Output: 48.28 MW AC







# **Overview and Surrounding Area:**

The DTE Lapeer solar farm is located just south of the City of Lapeer, in Lapeer County, Michigan and is a joint project between the City of Lapeer and DTE Electric Company. The solar farm was developed with Inovateus Solar MI, LLC to meet Michigan renewable energy standards. The solar farm features over 200,000 panels, a power output of 48.28 MW AC, and produces enough energy to power 14,000 homes. The Lapeer solar project was developed in two phases: the Demille Solar installation and the Turrill Solar installation. For purposes of our study, taken together, both installations are considered one solar farm.



DTE's Lapeer Solar Projects Demille and Turrill solar installations

Lapeer is considered to be in the Tri-Cities area of central Michigan and is approximately 21 miles east of the City of Flint. Interstate-69 serves Lapeer and runs east-west just south of the solar farm. The two phases of the solar installation are on the east and west sides of Michigan State Route 24 from each other.



### **The Immediate Area:**

Land uses surrounding the Demille installation include a correctional facility and industrial uses to the west, buffered by a mature stand of trees, a retail center to the northeast, other commercial uses to the east along MI-24/South Lapeer Road, and residential homes to the southeast. Interstate-69 runs south of the Demille solar installation.

The Turrill installation is surrounded to the north by a residential subdivision, to the north and east by industrial uses, to the south by vacant land and residential homes, and to the west by light commercial and professional uses along MI-24/South Lapeer Road. Hunter's Creek divides two sets of solar arrays in the Turrill installation.

The Demille installation is surrounded on the west by a large grove of mature trees. A small part of the solar farm extends southward and adjoins Interstate-69 while more mature trees and shrubbery buffer the rest of the southern exposure of the south side of the solar panels. To the southeast, buffering the subdivision homes are mature trees and some shrubbery. The eastern border of the solar installation is primarily existing mature trees, and some vacant land. To the northeast corner of the solar panels is a senior living facility, Stonegate Health Campus, developed before the solar facility that is buffered by shrubbery and mature trees. According to employees at Stonegate the solar panels are not visible from the building.

The Turrill installation is separated from Tower Road on the west by trees and shrubbery. To the south, existing mature trees and shrubbery buffers the solar panels from Turrill Road. The solar panels are bisected by Hunters Creek, which runs roughly north-south. Mature trees buffer the industrial uses on the eastern side and the northeastern corner of the solar panels. The northern border of the solar panels is separated from the Hunters Creek subdivision by mature trees as well.

Prior Use: Agricultural use

#### **Real Estate Tax Information:**

Prior to the development of the solar farm, the land under the Demille and Turrill solar installations were municipal-owned and were not subject to property tax. After development, in 2017, the land became taxable and taxes were \$82,889 total, as shown below.

PIN	Acres
Lapeer County, MI	
L20-98-008-003-00*	110.84
L20-95-705-050-00*	254.84
TOTAL	365.68

2016 Taxes Paid		201	17 Taxes Paid	Tax Increase		
\$	-	\$	34,294	N/A		
\$	-	\$	48,595	N/A		
\$	-	\$	82,889	N/A		

2016 A	ssessed	201	Value	
V	alue		Value	Increase
\$	-	\$	726,700	N/A
\$	-	\$	1,029,750	N/A
\$	-	\$	1,756,450	N/A

<sup>\*</sup> Prior to development as a solar farm, the parcels were municpal property without a taxable value.



### Paired Sale Analysis:

The maps, below, and on the following pages display properties adjoining the solar sites that are numbered in red for subsequent analysis.

# **Demille Solar Farm**



DTE's Lapeer Solar Projects - Demille Adjoining Properties





DTE's Lapeer Solar Projects - Demille Adjoining Properties



### **Turrill Solar Farm**



DTE's Lapeer Solar Projects - Turrill Adjoining Properties





DTE's Lapeer Solar Projects - Turrill Adjoining Properties



In reviewing Adjoining Properties to study in a Paired Sale Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

We identified seven Adjoining Properties that sold since the solar farm started operations in May of 2017: Adjoining Properties 3, 4, 7, 9, and 16 for the Demille Solar Farm, and Adjoining Properties 3 and 4 for the Turrill Solar Farm. Of these properties, three were considered atypical for the area.

Adjoining Property 7 adjacent to the Demille Solar farm is a split-level home with a finished walk out basement with a pool. The typical home in the area has a traditional basement and pools are atypical. The unusual nature of this sale was confirmed with the selling broker, Renee Voss (see comments below).

Adjoining Property 16 just south of the Demille Solar Farm is a 10.1-acre lot that is buffered by trees. The home is atypical for the area, as most homes are situated on lots between 1-acre and 1.5-acres in size and were built before 1980; this home was built in 2008. We interviewed the broker Josh Holbrook (see comments below) who confirmed the atypical nature of this property.

Adjoining Property 3, just west of the Turrill Solar Farm, was a ranch home with 1,348 square feet on a lot that was just over one acre. Comparables for homes of this size, type, and lot size were not available in the immediate market area. It should be noted that the price per square foot for this home (\$108.01) is significantly higher than median price per square foot of either data set we studied.

As a part of our research, we interviewed three local real estate brokers that sold homes adjacent to the Lapeer Solar farm. According the brokers, there was no impact on the home prices or marketability due to the homes' proximity to the solar arrays.

Renee Voss of Coldwell Banker, selling broker of the raised ranch at 1138 Don Wayne Drive (Adjoining Property 7), which is adjacent to the Demille solar farm at the southeast corner, noted that there was no impact on this sale from the solar farm located to the rear. The home, which has a pool in the backyard, sold quickly with multiple offers, Voss stated.

Josh Holbrook, the selling broker of 1408 Turrill Road (known as Adjoining Property 16), located just south of the Demille Solar Farm, said the solar farm had no impact on the sale and that the community takes pride in the solar farm.

Anne Pence of National Realty Centers, the selling broker for 1126 Don Wayne Drive, a single-family home adjacent to the Demille solar farm (known as Test Area Sale 9), reported that "the solar farm did not have any effect on the sale of this home. The buyers did not care one bit about the solar field in the back yard. The fact is that you know no one is going to be behind you when they develop a solar farm in your back yard. And there they put up trees to block the view. My in-laws also actually live at end of that street, even though they haven't sold or put their house on market, they don't mind the solar panels either. It's not an eyesore. And another house sold on that block, a raised ranch home, and it sold with no problems."



### **Group 1 – Demille:**

Adjoining Properties 3, 4, and 9 to the Demille Solar Farm were considered for a paired sales analysis, and we analyzed these properties as single-family home uses in Group 1. The improvements on these properties are located between 210 to 255 feet to the nearest solar panel.

	Test Area Sales									
		Grou	p 1 - Demille	Solar						
Adj. Property#	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF	
3, 4, 9	1174 Alice Dr, 1168 Alice Dr, 1126 Don Wayne Drive	\$160,000	0.50	3	2.0	1973	1,672	May-18	\$86.12	

We analyzed seven Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the median sale date of the Test Area Sales in Group 1. The Control Area Sales for Group 1 are ranch homes with three bedrooms and one and two bathrooms. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for DTE's Lapeer Solar Project - Group 1 is presented below.

DTE Lapeer Solar Group 1 - Demille Solar								
No. of Sales	Potentially Impacted by Solar Farm							
Test Area Sales (3)	Adjoining solar farm	\$86.12						
Control Area Sales (7)	No: Not adjoining solar farm	\$85.92						
Difference between Unit Pri Adjusted Median Unit Pri	0.24%							

The days on market for the three Test Area Sales had a median of 28 days on market (ranging from 5 to 48 days), while the median days on market for the Control Area sales was 72 days (ranging from 14 to 224 days), and we note no negative marketing time differential.



## **Group 2 – Turrill:**

Adjoining Property 4 to the Turrill Solar Farm was analyzed separately since it is a two-story home on a larger lot as Group 2. The home on Adjoining Property 4 is 165 feet from the property line to the nearest solar panel.

Test Area Sale Group 2 - Turrill Solar									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF
4	1060 Cliff Drive	\$200,500	1.30	4	2.5	1970	2,114	Sep-18	\$94.84

We analyzed four Control Area single-family homes sales with similar construction that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the sale date of Adjoining Property 4.

The Control Area Sales for Group 2 are 2-story homes with between two and four bedrooms and 2.5 to 3.0 bathrooms. We excluded sales that were bank-owned, and those between related parties.

We adjusted the Control Area Sales for market conditions using a regression analysis to identity the appropriate monthly market conditions adjustment. The result of our analysis for DTE's Lapeer Solar Project – Group 2 is presented below.

CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 2 - Turrill Solar								
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF						
Test Area Sale (1)	Adjoining solar farm	\$94.84						
Control Area Sales (4)	No: Not adjoining solar farm	\$91.80						
Difference between Unit Pr Adjusted Median Unit Pric	3.31%							

The days on market for the Test Area Sale was 2 days, while the median days on market for the Control Area sales was 35 days (ranging from 11 to 177 days), *and we note no negative marketing time differential.* 

**Noting no negative price differential**, with the Test Area Groups having a higher unit sale price than the Control Area sales, in either Group, it does not appear that the DTE's Lapeer Solar had any negative impact on adjacent property values.



SOLAR FARM 5: ELM CITY SOLAR FARM, WILSON COUNTY, NC

Coordinates: Latitude 35.781111, Longitude -77.846940

PINs: 3744-33-6758.01, 3744-11-9000.000

Total Land Size: 354 acres

Date Project Announced: September 2014

Date Project Completed: July 2012

Output: 40 MW AC



The Elm City Solar use is located in Elm City, North Carolina. Duke Energy owns the solar facility and selected HelioSage Energy to develop it. The solar farm went into operation in March 2016 and can generate power for approximately 7,000 homes. Nearly a half million solar panels comprise the farm.

The Surrounding Area: The Elm City solar installation is one of five solar farms in the immediate Elm City area. Elm City is the largest at 40 MW, and the other four solar uses have a maximum combined output capacity of 20 MW AC. Two of the solar farms are very close to the center of the Town of Elm City, and adjacent to residential homes with higher density. Wilson County has a total of 13 solar farms. Wooded and forested land in the Elm City area is frequently sought out for recreational purposes including game hunting, as well as for timber land. The Elm City solar farm is approximately 2.5 miles driving distance, southeast, from the center of the Town of Elm City along Elm City Road, and 6.4 miles northeast of the larger city of Wilson, along US Highway 301.

<u>The Immediate Area:</u> Surrounding land uses consist of residential homes and forest land to the north; forest and agricultural land, with some rural residential homesteads, to the east; vacant land, forest land and the Cattail Swamp stream, plus residential homes further to the south; and residential and industrial uses plus vacant and forest land to the west.



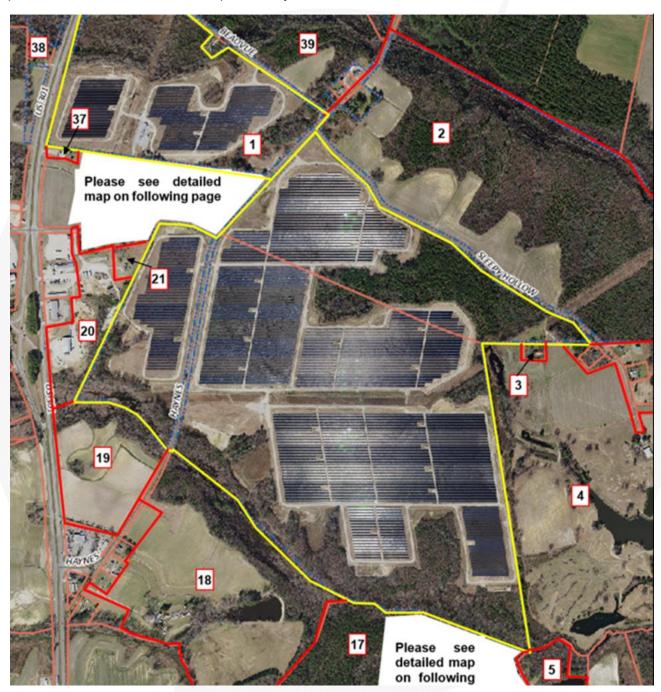
**Real Estate Tax Info:** In 2016, prior to the property being assessed as a solar farm, the assessed value of the land was \$206,220 and ownership paid \$2,805 in real estate taxes. In 2017, the assessed value increased to \$1,779,830 and the real estate tax increased to \$24,506, an increase in tax revenue of 463 percent.

PIN	Acres
Wilson County, NC	
3744119000.000	249.00
3744336758.01*	105.00
TOTAL	354.00

6 Taxes Paid	201	Tax Increase		
\$ 2,805	\$	14,624	421%	
\$ 1,494	\$	9,581	541%	
\$ 4,298	\$	24,206	463%	

2016	6 Assessed Value	Value Increase	
\$	206,220	\$ 1,075,330	421%
\$	117,881	\$ 704,500	498%
\$	324,101	\$ 1,779,830	449%

The following map displays the parcels within the solar farm is located (outlined in red). Properties adjoining the solar parcels are numbered for subsequent analysis.



Elm City Solar Adjoining Properties





Elm City Solar Adjoining Properties



Elm City Solar Adjoining Properties



### Paired Sales Analysis

Adjoining Property 23 (Test Area Sale) was considered for a paired sales analysis, and the house sold after development of the solar farm. The property was analyzed as a single-family home use. We discussed this sale with Selby Brewer, real estate agent with First Wilson Properties, Inc., who sold the property. He said the buyers "did not even mention" the solar farm, and he saw <u>no differences between this home and others in the market.</u>

	SUMMARY OF TEST AREA SALE										
				Elm Cit	y Solar						
Property #	Address	Sale Price	Beds	Baths	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Sale Price / SF	Sale Date	
Test Sale Adjoining Property 23	5213 Sharon Acres Rd	\$81,000	3	1.0	1964	1,431	SFR	0.47	\$56.60	Apr-18	

For Adjoining Property 23, we analyzed eight Control Area Sales that sold within a reasonable time frame from the sale date of Adjoining Property 23.

The Control Area Sales are ranch homes with three bedrooms and one and half bathrooms or two bathrooms. We excluded sales that were bank-owned and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Elm City Solar is presented below.

CohnRezi			
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF	
Test Area Sales (1)	Adjoining solar farm	\$56.60	
Control Area Sales (8)	No: Not adjoining solar farm	\$55.57	
Difference between Unit Pri Adjusted Median Unit Pri	1.85%		

The days on market for the Test Area Sale was 38 days (less than two months). The control sales ranged from 5 to 204 days on market (0-8 months).

**Noting no negative price differential**, it does not appear that the Elm City Solar use impacted the sale price of the Test Area Sale, Adjoining Property 23. This was confirmed by the real estate agent who marketed and sold this home.

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SOLAR FARM 6: SHOREHAM SOLAR COMMONS, SUFFOLK COUNTY, NY

Coordinates: Latitude 40.94, Longitude -72.89

PIN: 0200126000200002001

Recorded Owner: PHIE Shoreham LLC

Total Land Size: 149.62 Acres

Date Project Announced: May 2016

Date Project Completed: July 2018

Output: 24.9 MW AC



This solar farm is located on the former "Tallgrass Golf Course" located in an unincorporated area of Suffolk County, in the Hamlet of Brookhaven (The mailing city is "Shoreham"). The solar farm was developed by Invenergy. This solar farm is ground mounted and has the capacity for 24.9 Megawatts (MW) AC of power.

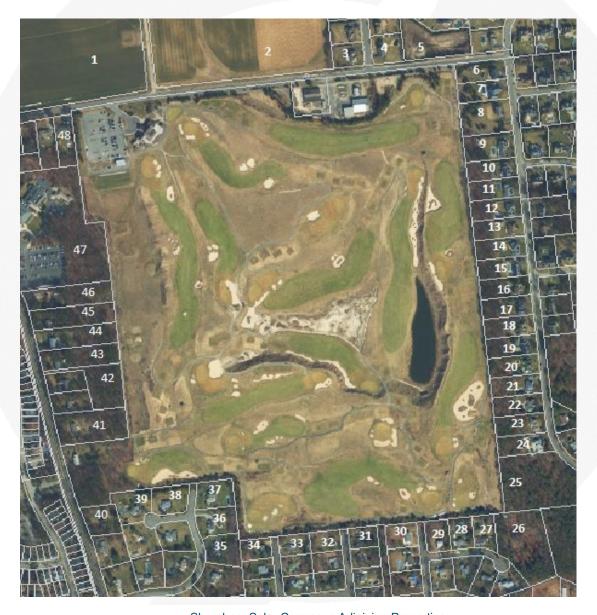
<u>The Surrounding Area:</u> Shoreham is a coastal area just south of the Long Island Sound in the State of New York. Surrounding land uses consist of residential and forest land to the north; forest and agricultural land to the east; vacant, forest, and residential land to the south; and residential, industrial, vacant, and forest land to the west.



<u>The Immediate Area:</u> It is primarily surrounded by residential homes. The solar farm is situated on a former golf course.

**<u>Real Estate Tax Info:</u>** Shoreham Solar Commons is located on municipal land which is exempt from property taxes.

The following map identifies the adjacent parcels. This assessor's aerial image was taken prior to the solar farm's construction, reflecting the closed golf course.



Shoreham Solar Commons Adjoining Properties

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# **Paired Sales Analysis**

We have identified Adjoining Property 8 as having sold after announcement of the solar farm. However, the marketing comments advertised the house as backing to a golf course, which indicates that the sale may have transacted without a solar farm external influence factor, and so it was excluded from this analysis. We have also identified Adjoining Properties 19, 32, and 35 as selling during construction of the solar farm. We have reviewed the marketing comments and found no mention of either the golf course or the solar farm. We did analyze these sales and they do not show a negative price differential; however, as these sales occurred prior to the opening and operations of the solar farm, any influence may not have been demonstrated yet, so we have excluded these from the paired sales analysis.

We analyzed five Control Area Sales that sold within a reasonable time frame from the median sale date of Adjoining Property 43, which sold after the solar farm was in operation, in August 2018.

	TEST AREA SALE Shoreham Solar Commons									
Adjoining Property #	Address	Sale Price	Bedrooms	Bathrooms	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Price PSF	Sale Date
43	121 Randall Rd	\$400,000	4	2.0	1977	2,400	2-Story SFR	0.57	\$166.67	Aug-18

For Adjoining Property 43, we analyzed six Control Area Sales that sold within a reasonable time frame from the sale date of Adjoining Property 43. All Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

The Control Area Sales are 1- and 2-story homes with three or four bedrooms, and one to three baths. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Shoreham Solar Commons is presented below.

CohnReznick Paired Sales Analysis Shoreham Solar Commons					
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF			
Test Area Sales (1)	Adjoining solar farm	\$166.67			
Control Area Sales (6)	No: Not adjoining solar farm	\$161.08			
Difference between Unit Pri Adjusted Median Unit Pri	3.47%				



The days on market for the Test Area Sale was 2 days (less than 1 month). The Control Area Sales ranged from 2 to 209 days on market (0-8 months).

<u>Noting no negative price differential</u>, it does not appear that the Shoreham Solar Commons impacted the sales price of the Test Sale, Adjoining Property 43.



SOLAR FARM 7: WOODLAND SOLAR FARM, ISLE OF WIGHT COUNTY, VA

Coordinates: Latitude 36.890000, Longitude -76.611000

PINs: 41-02-004, 41-02-001, 41-02-001A, 41-02-005

Total Land Size: 211.12 acres

Date Project Announced: August 4, 2015

**Date Project Completed:** December 2016

Output: 19.0 MW AC



Aerial imagery retrieved from Google Earth



# **Overview and Surrounding Area:**

The Woodland Solar Farm is located in unincorporated Isle of Wight County, Virginia, and was developed by Dominion Virginia Power in 2016. This solar farm has a capacity of 19.0 Megawatts (MW) AC of power, which is enough to power 4,700 homes. The solar farm sits on 204 acres, part of Oliver Farms, a 1,000-acre site that was chosen for its flat land and proximity to power lines. The land under the solar arrays was previously farmed and used to grow broccoli, collards, peas, strawberries and butter beans. The solar installation includes 79,648 solar panels and was one of the largest of its kind at the time of construction.

Isle of Wight County is in the southeast part of Virginia and has shoreline along the James River on its eastern border. The county is predominantly rural and has two incorporated towns, Smithfield and Windsor. The Woodland Solar facility is approximately 27 miles northwest of Norfolk, Virginia, across the Elizabeth River and the Nansemond River. The solar site is also approximately 21 miles southwest of Newport News, Virginia. The town of Smithfield is approximately nine miles northeast of the solar facility and the town of Windsor is approximately 12 miles southwest. The solar facility is near the intersection of State Route 600 (Oliver Drive) and State Route 602 (Longview Drive).

### The Immediate Area:

Land uses surrounding the Woodland Solar facility include forests and agricultural land to the north, west, and south, and residential and farm land to the east.

Landscaping around the solar site consists of the naturally occurring vegetation and forests. It should be noted that the land owner that leases the land to the developer has agricultural buildings and other structures along Longview Drive and the nearest solar panels are approximately 220 feet from the property line.

Prior Use: Agricultural use

**Real Estate Tax Info:** In 2015, prior to the property being assessed as a solar farm, the assessed value of the property was approximately \$542,200 and ownership paid \$4,609 in real estate taxes (see below). In 2016, the assessed value increased to \$3,021,600 and the real estate tax increased to \$27,844.

**************************************	
PIN	Acres
Isle of Wight County, VA	
41-02-004	107.32
41-02-001	62.66
41-02-001A	8.08
41-02-005	33.06
TOTAL	211.12

5 Taxes Paid	20	16 Taxes Paid	Tax Increase
\$ 2,250	\$	15,985	610%
\$ 1,369	\$	8,601	529%
\$ 230	\$	1,193	420%
\$ 761	\$	2,065	171%
\$ 4,609	\$	27,844	504%

201	Assessed Value	Value Increase	
\$	264,700	\$ 1,728,100	553%
\$	161,000	\$ 939,900	484%
\$	27,000	\$ 110,700	310%
\$	89,500	\$ 242,900	171%
\$	542,200	\$ 3,021,600	457%



# **Paired Sales Analysis:**

The map below displays the Adjoining Properties to the solar farm (outlined in red). Properties adjoining the solar farm parcels are numbered for subsequent analysis.



Woodland Solar - Adjoining Properties

In reviewing Adjoining Properties to study in a paired sales analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

We identified three Adjoining Properties that sold since the solar farm started operations in December 2016: Adjoining Property 3, and two parcels included in Adjoining Property 5. The two properties that were considered part of Adjoining Property 5, sold between related parties, and were sales between family members of the land lessor for the solar site. These two sales were excluded from further analysis because they were not arm's-length transactions.



Adjoining Property 3 was considered for a paired sales analysis, and we analyzed this property as single-family home use. The improvements on this property is located approximately 600 feet to the nearest solar panel.

Test Area Sale - Adjoining Property 3									
Adj. Property#	Address		Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median GLA (SF)	Median Sale Date	Median Price PSF
3	18146 Longview Drive	\$175,000	1.00	3	1	1978	1,210	Jun-16	\$144.63

We analyzed five Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the median sale date of the Test Area Sale. The Control Area Sales one-story homes with three bedrooms and one and two bathrooms. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Woodland Solar Farm is presented below.

CohnReznick Paired Sales Anaysis Woodland Solar Farm Adjoining Property 3						
No. of Sales	Adjusted Median Price Per SF					
Test Area Sale (1)	Yes: Adjoining solar farm	\$144.63				
Control Area Sales (5)	No: Not adjoining solar farm	\$137.76				
Difference between Unit Price of Tolerand Median Unit Price of Co	4.99%					

The difference between the unit price of the Test Area Sale and the Adjusted Median Unit Price of the Control Area Sales is considered within the range for a typical market area.

**Noting no negative marketing time differential**, the Test Area Sale sold in 33 days (1-2 months), while the Control Area Sales sold between 17 and 37 days (0-2 months), with a median time on market of 28 days.

<u>Noting no negative price differential</u>, with the Test Area Sale having a higher unit sale price than the Control Area sales, it does not appear that the Woodland Solar Farm had any negative impact on adjacent property values.



SOLAR FARM 8: S-POWER SHOREHAM SOLAR FARM, SUFFOLK COUNTY, NY

Coordinates: Latitude 40.943139, Longitude -72.890467

**PIN:** 2001040002000

Total Land Size: 59.8 acres

Date Project Announced: October 20, 2014

Date Project Completed: May 31, 2016

Output: 14.3 MW AC





This solar farm is located at the southeast corner of the intersection of NY State Route 25A and Miller Avenue, in Shoreham, Suffolk County, on the north shore of Long Island. The site is located in an unincorporated area of Suffolk County, in Brookhaven Township; the mailing city is "Shoreham."

The solar farm was developed by S-Power and the project was completed on May 31, 2016. With a total system size of 14.3 MW AC of output, the Shoreham Solar Farm produces more than 19 million kilowatt-hours of energy annually, enough to power approximately 2,485 homes. The solar facility consists of 30 fixed tilt ground mounted solar inverters.

<u>The Surrounding Area:</u> Shoreham is a coastal area just south of the Long Island Sound in the State of New York, with a rural character, residential development dispersed with agricultural land.

<u>The Immediate Area:</u> The solar facility has agricultural land to the west (a sod farm) and southwest, and residential subdivisions directly to the east and across Route 25A to the north.

<u>Landscaping:</u> To the north, the residences are buffered by tree plantings with the panels just slightly visible. To the east, established landscaping buffers the farm.

**<u>Real Estate Tax Info:</u>** Shoreham Solar Commons is located on municipal land which is exempt from property taxes.

The map on the following page identifies the adjoining parcels to the solar farm.





S-Power Shoreham Solar Farm Adjoining Properties



# **Paired Sales Analysis**

We identified three adjacent parcels that sold over the past three years, since the solar farm was completed, Adjoining Properties 5, 9, and 22.

Upon review of the marketing materials and property records for Adjoining Property 9, we have concluded this was a distressed sale and the property likely sold for land value. We have excluded this sale from further analysis.

### Group 1

Adjoining Property 5 (Test Area Sale), located across Route 25A from the solar farm, with a direct view of the site, was a market transaction and was considered for a paired sales analysis.

	TEST AREA SALE GROUP 1									
Property #	Address	Sale Price	Beds	Baths	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Sale Price/SF	Sale Date
Adjoining Property 5	18 Estates Lane	\$320,000	4	2.0	1960	1,577	Ranch	0.26	\$202.92	Apr-19

We analyzed five Control Area Sales of single-family homes with similar square footages, lot sizes, and age that sold within a reasonable time frame from the sale date of Adjoining Property 5. We adjusted the Control Area Sales for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The results of our analysis for Group 1 are presented below.

CohnReznick Paired Sales Anaysis S-Power Shoreham Solar GROUP 1 - Adjoining Property Number 5							
No. of Sales	Adjusted Median Price per SF						
Test Area Sale (1)	Yes: Adjoining Solar Farm	\$202.92					
Control Area Sales (5)	Control Area Sales (5) No: Not Adjoining Solar Farm						
Difference between Unit Price of Median Unit Price of 0	3.58%						

**Noting no negative price differential**, it appears that the S-Power Shoreham Solar Commons did not impact the sales price of the Test Area Sale, Adjoining Property 5, in Group 1.



### Group 2

Adjoining Property 22 (Test Area Sale), which shares a property line with the solar farm, with a direct view of the site, was a market transaction and was considered for a paired sales analysis.

	TEST AREA SALE GROUP 2									
Property #	Address	Sale Price	Beds	Baths	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Sale Price/SF	Sale Date
Adjoining Property 22	12 Sherwood Drive	\$670,000	5	3.5	2006	3,400	2-Story	0.79	\$197.06	Jun-17

We analyzed five Control Area Sales of single-family homes with similar square footages, lot sizes, and age that sold within a reasonable time frame from the sale date of Adjoining Property 22. We adjusted the Control Area Sales for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The results of our analysis for Group 2 are presented below.

CohnReznick Paired Sales Anaysis S-Power Shoreham Solar GROUP 2 - Adjoining Property Number 22						
No. of Sales  Potentially Impacted by Solar Farm  Price pe						
Test Area Sale (1)	Yes: Adjoining Solar Farm	\$197.06				
Control Area Sales (5)	Control Area Sales (5) No: Not Adjoining Solar Farm					
Difference between Unit Price o Median Unit Price of	13.46%					

The results of our initial analysis for Group 2 reflect a 13.46 percent difference in adjusted median price per square foot between the Test Area Sale and the five Control Area Sales. However, upon further testing, the direct matched pair sale, using the home in the Control Area Sale which was most similar to the Test Area Sale home, reflected a differential of 3.35 percent, which is more consistent with the range we see in typical impact studies and does not result in any demonstration of negative property value influence associated with the adjacent solar farm.



**SOLAR FARM 9: DOMINION INDY SOLAR III, MARION COUNTY, IN** 

Coordinates: Latitude 39°39'14.16"N, Longitude 86°15'35.06"W

PIN: 49-13-13-113-001.000-200

Total Land Size: 129.04 acres

Date Project Announced: August 2012

Date Project Completed: December 2013

**Output:** 8.6 MW AC (11.9 MW DC)



Aerial imagery retrieved from Google Earth

# **Overview and Surrounding Area:**

The Dominion Indy III Solar Farm was developed by Dominion Renewable Energy and became operable in December 2013. This solar farm has ground-mounted solar panels and has the capacity for 8.6 Megawatts (MW) AC of power. The panels are mounted in a fixed tilt fashion with 12 inverters.



The Dominion Indy III solar farm is located in Decatur Township, in the southwest portion of Marion County, Indiana. The solar farm is approximately 10 miles southeast of the Indianapolis International Airport and approximately eight and a half miles from the center of Indianapolis.

### The Immediate Area:

The solar installation is on the southern side of West Southport Road. Adjoining parcels to the west, south, and east are agricultural in nature, actively farmed primarily with row crops and large areas of mature trees. There is one single family home on 4.78 acres of land at the northwest corner of the solar site, with frontage on West Southport Road, identified in our analysis as Adjoining Property 9.

To the north, across West Southport Road from the solar site, is the single-family residential subdivision known as Crossfield. Originally developed with over 81 acres of land by the Key Life Insurance Company, the one- and two-story homes in the subdivision were built between approximately 1998 and 2011.

All of the adjacent land parcels to the solar farm are used for agricultural or residential purposes.

The solar farm is surrounded by a chain link fence that contains all the solar panels. Additionally, there are some natural shrubs and deciduous trees on all sides of the property; this vegetation was in place before the solar farm was developed.

Prior Use: Agricultural use

**Real Estate Tax Information:** Prior to development of the solar farm, in 2013, the owner of this 129-acre site paid real estate taxes of \$1,788 annually. After development of the solar farm development, in 2015, real estate taxes increased to approximately \$16,405, an 818 percent increase in tax revenue for the site.

PIN	Acres
Marion County, IN 49-13-13-113-001.000-200	129.04
TOTAL	129.04

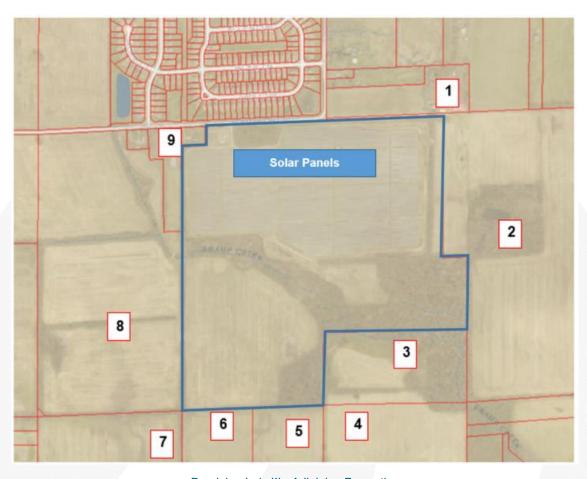
201	3 Taxes Paid	20	15 Taxes Paid	Tax Increase
\$	1,788	\$	16,405	818%
\$	1,788	\$	16,405	818%

2013	Assessed Value	201	15 Assessed Value	Value Increase		
\$	89,400	\$	109,900	23%		
\$	89,400	\$	109,900	23%		

### Paired Sale Analysis:

The maps on the following pages display the parcels within the solar farm is located (outlined in blue). Properties adjoining this site are numbered for subsequent analysis.





Dominion Indy III - Adjoining Properties



Dominion Indy III - Adjoining Properties

We have considered two types of paired sales analysis with regards to the Dominion Indy III Solar Farm. The first compares sales of Adjoining Properties to the solar farm after the completion of the solar farm site (Test Area Sales) to similar properties not proximate to the solar farm (Control Area Sales). We utilized this type of paired sale analysis for all three Groups of Adjoining Properties under study.

The second type of paired sale analysis is known as a Before and After analysis which compares sales of Adjoining Properties that occurred prior to the announcement of the solar farm with the sales of the same Adjoining Properties after the completion of the solar farm development. We were able to use home sale data from the Crossfield subdivision that is located to the north of the solar site, across West Southport Road.

### Group 1 - Agricultural Land

Adjoining Property 2 is a vacant 86.96-acre agricultural parcel located to the east of the solar site. Adjoining Property 2 sold in October 2017 and was considered for a paired sale analysis, known as a Test Area Sale, in Group 1.

The property line of this unimproved parcel is approximately 166 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 12.



Test Area Sale Group 1 - Agricultural Land								
Adjoining Property #	Address	Sale Price	Site Size (AC)	NCCPI Index	Wetlands	Floodplain	Sale Price/AC	Sale Date
Adjoining Property 2	5755 W Southport Rd, Indianapolis, IN	\$738,584	89.96	63.4	1%	Zone X	\$8,210	Oct-17

Crop yields have been the basis for establishing a soil productivity index, and are used by county assessors, farmers, and market participants in assessing agricultural land. While crop yields are an integral part in assessing soil qualities, it is not an appropriate metric to rely on because "yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indices provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management such as an average level." The productivity index, therefore, not crop yields, is best suited for applications in land appraisal and land-use planning.

The United States Department of Agriculture's (USDA) National Resources Conservation Services (NRCS) developed and utilizes the National Commodity Crop Productivity Index (NCCPI) as a national soil interpreter and is used in the National Soil Information System (NASIS), but it is not intended to replace other crop production models developed by individual states.<sup>13</sup> The focus of the model is on identifying the best soils for the growth of commodity crops, as the best soils for the growth of these crops are generally the best soils for the growth of other crops.<sup>14</sup> The NCCPI model describes relative productivity ranking over a period of years and not for a single year where external influences such as extreme weather or change in management practices may have affected production. At the moment, the index only describes non-irrigated crops, and will later be expanded to include irrigated crops, rangeland, and forestland productivity.<sup>15</sup>

Yields are influenced by a variety of different factors including environmental traits and management inputs. Tracked climate and soil qualities have been proven by researchers to directly explain fluctuations in crop yields, especially those qualities that relate to moisture-holding capacity. Some states such as Illinois have developed a soil productivity model that considers these factors to describe "optimal" productivity of farmed land. Except for these factors, "inherent soil quality or inherent soil productivity varies little over time or from place to place for a specific soil (map unit component) identified by the National Cooperative Soil Survey (NCSS)." The NRCS Web

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<sup>&</sup>lt;sup>13</sup> Agricultural land rental payments are typically tied to crop production of the leased agricultural land and is one of the primary reasons the NCCPI was developed, especially since the model needed to be consistent across political boundaries.

<sup>&</sup>lt;sup>14</sup> Per the User Guide for the National Commodity Crop Productivity Index, the NCCPI uses natural relationships of soil, landscape and climate factors to model the response of commodity crops in soil map units. The present use of the land is not considered in the ratings.

<sup>&</sup>lt;sup>15</sup> AgriData Inc. Docs: http://support.agridatainc.com/NationalCommodityCropProductivityIndex(NCCPI).ashx

<sup>&</sup>lt;sup>16</sup> USDA NRCS's User Guide National Commodity Crop Productivity Index (NCCPI)

Soil Survey website has additional information on how the ratings are determined. The **State of Indiana** does not have its own crop production model and utilizes the NCCPI.

In analyzing agricultural land sales for Control Area Sales with similar characteristics to Adjoining Property 12, we have excluded any parcels with NCCPI soil indices less than 50.0 and greater than 85.0.

We identified and analyzed four Control Area Sales that were comparable in location, size, and use that were not located in close proximity to the solar farm. The Control Area Sales for Adjoining Property 2 are land tracts that were larger than 20 acres and utilized specifically as farmland. We excluded sales that were bank-owned, those between related parties, split transactions, and land with significant improvements.

The Control Area Sales were adjusted for market conditions using a regression and trend analysis to identify the appropriate monthly market condition adjustment. Using the agricultural land sale data published in the *Land Sales Bulletin*, <sup>17</sup> from January 2016 through December 2017, which includes reliable and credible data for analysis, we extracted a monthly rate of change of 0.50 percent.

The results of our analysis for Adjoining Property 2, in Group 1 is presented below.

CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 1 - Agricultural Land					
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre			
Test Area Sale (Adjoining Property 2)	Yes: Solar Farm was completed by the sale date	\$8,210			
Control Area Sales (4)	No: Not adjoining solar farm	\$8,091			
Difference between Unit Price o	1.47%				

It is noted that we have kept this analysis within our study despite it being the sole land-only analysis. While we have not tabulated the difference in our reconciled average of variance (from study to study), this is important because it shows that agricultural land adjacent to solar but also lying in the future path of development does not show any degradation of value.

<u>Noting the relatively low price differential</u>, in which the Test Area Sale was higher than the median for the Control Areas Sales, it does not appear that the Dominion Indy III solar farm had any negative impact on the adjoining agricultural property values.



<sup>17</sup> https://www.landsalesbulletin.com/

We idenitified a total of nine Adjoining Properties that sold after the develoment of the solar farm as single-family home uses. Adjoining Properties 11, 13, 14, 15, 18, 20, 22, 24 and 26 were analyzed in two paired sales analyses (Group 2 and Group 3). These nine properties were analyzed as single-family homes and they are located in the Crossfield subdivision, across West Southport Road from the solar site, as seen in the prior aerials.

It should be noted that Adjoining Properties 11 and 24 have sold more than once since the solar farm was constructed, and each sale is included in the analysis. Adjoining Property 11 sold first in December 2015 and later in July 2018, approximately two and a half years later. Adjoining Property 24 sold first in February 2014 and later in April 2019, approximately five years later. Our research indicated that these were arm's-length sales between typically motivated buyers and sellers.

The nine Adjoining Properties that were included in our paired sales analysis were divided into two groups, based on the sale dates of the Test Area Sales.

### **Group 2**

For Group 2 (sales in 2014 – 2016), we analyzed four Control Area Sales with similar location, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Group 2 Test Area Sales described below.

Dominion Indy III Solar Test Area Sales Group 2									
Adj. Property#	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths		Median Square Feet	Median Sale Date	Median Price PSF
11, 20, 22, 24	5933 Sable Dr, 5829 Sable Dr, 5813 Sable Dr, 5737 Sable Dr	\$129,375	0.23	4	2.0	2008	2,163	Jul-15	\$59.10

The Test Area Sales in Group 2 are located between 230 feet and 404 feet from the house to the solar panels. The Control Area Sales for Group 2 are located beyond this area in other areas of the Crossfield subdivision and in other nearby subdivisions. The Control Area Sales did not have a view of the solar farm.

### **Group 3**

For Group 3 (sales in 2017 - 2019), we analyzed a set of seven Control Area Sales with similar locations, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Group 3 Test Area Sales described on the next page.



Test Area Sales Group 3									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF
11, 13, 14, 15, 18, 24, 26	5933 Sable Dr, 5921 Sable Dr, 5921 Sable Dr, 5915 Sable Dr, 5909 Sable Dr, 5841 Sable Dr, 5737 Sable Dr, 5731 Sable Dr	\$169,900	0.23	3	2.5	2006	2,412	Jul-18	\$72.15

The Test Area Sales in Group 3 are located between 227 feet and 419 feet from the house to the solar panels. The Control Area Sales are located beyond this area, in other areas of the Crossfield Subdivision, and in other nearby subdivisions. The Control Area Sales did not have a view of the solar farm.

Control Area Sales in Groups 2 and 3 were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below.

CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 2						
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF				
Test Area Sales (4)	Adjoining solar farm	\$59.10				
Control Area Sales (8)	No: Not adjoining solar farm	\$57.84				
Difference between Unit Pr Adjusted Median Unit Pri	2.18%					

CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 3						
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF				
Test Area Sales (7)	Adjoining solar farm	\$72.15				
Control Area Sales (11)	No: Not adjoining solar farm	\$71.69				
Difference between Unit Pri Adjusted Median Unit Pric	0.65%					

The Test Area Sales for Group 2 sold with a median of 33 days on market, while the Control Area Sales for Group 2 sold with a median of 31 days on market. The Test Area Sales for Group 3 sold with a median of 17

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days on market, while the Control Area Sales for Group 3 sold with a median of 25 days on market. There is no <u>significant negative marketing time differential.</u>

**Noting the relatively low price differentials,** it does not appear that the Dominion Indy III solar farm had any negative impact on adjoining residential property values.



# **Before Announcement and After Construction of the Solar Farm Analysis:**

Due to the number of sales over time in the Crossfield subdivision, we were able to conduct an analysis on the unit prices of single-family homes before the solar farm announcement date in comparison to the prices of single-family homes after the construction of the Dominion Indy III solar farm. We have provided our conclusions from the data below and the following page contains a chart with the data.

- 25 Test Area Sales were sold from 2006 to 2019 and 46 Control Area Sales sold from 2008 to 2019.
  - The Test Area Sales are homes located adjoining the Dominion Indy III Solar Farm in the Crossfield subdivision.
  - ➤ The Control Area Sales are homes located in the remainder of the Crossfield subdivision, not adjoining the solar farm.
- In both the Test Area Sales (ORANGE) and Control Area Sales (BLUE) plotted on the chart on the following page, new construction homes sold through 2011, prior to announcement of the solar farm.
- The dotted lines are polynomial trend lines plotted by Microsoft Excel in order to illustrate and approximate the "average" trend of each set of data.
- The economic climate improved in the period from 2013 to 2019 as shown by the Red line representing the Federal Housing Finance Agency's House Price Index for the East North Central region that includes Indiana. After construction of the solar farm, in parallel with the improving economic climate, it appears that unit prices for both the Test Area Sales and the Control Area Sales appreciated at a similar rate over the period from 2013 to 2019.

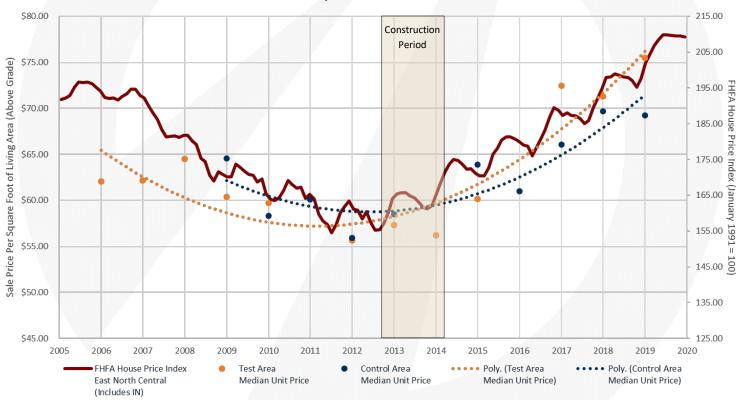
A difference in appreciation rates does not appear to exist between Test Area Sale homes versus the Control Area Sale homes.

Sale prices of single-family homes after the construction of the solar farm exhibit a similar appreciation trend as sales prior to the solar farm announcement. Overall, our findings indicate that there *is not a consistent and measurable difference* in prices that exists in association with homes proximate to the Dominion Indy III solar farm.



# Before Announcement and After Construction of the Solar Farm Analysis:

Dominion Indy III - Crossfield Subdivision: Test Area vs Control Area Comparison of Unit Sale Prices from 2006 to 2019



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# SOLAR FARM 10: BAREFOOT BAY SOLAR ENERGY CENTER, BREVARD COUNTY, FL

Coordinates: Latitude 27°52'15.5"N, Longitude 80°31'38.3"W

PINs: Multiple

Recorded Owner: Florida Power & Light Company

Total Land Size: 462 acres

Date Project Announced: January 2017

Date Project Completed: May 2018

Output: 74.5 MW AC



The Barefoot Bay Solar Energy Center is located north of Sebastian, in the unincorporated community of Micco, in coastal Brevard County, Florida. The solar installation sits on a 462-acre site, on land that was formerly an orange grove. Florida Power and Light held an open house for the area residents in January of 2017. The construction started in June of 2017 and was completed in May of 2018. The solar energy center has a capacity of approximately 74.5 MW AC.

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<u>The Surrounding Area:</u> The solar site is approximately 450 feet south of Micco Road, an east-west arterial, approximately 1.5 miles west of U.S. 1, which runs along the shores of the Indian River. The solar installation is surrounded by trees and vegetation and is adjoined by residential development to the north and east. Along Micco Road, to the northwest of the solar farm, are several mixed-use lots, with agricultural, rural residential, and industrial uses.

To the east of the solar farm are rural residential lots with extended driveways. Several of these parcels are flag lots with secluded residences set back. At the southeast corner of the solar site, are approximately 441 acres of land zoned agricultural-residential by Brevard County owned by a cattle ranch operation.

To the south of the solar site lies the Wheeler Stormwater Park which is a 300-acre stormwater management area. The site includes 163 acres of park land with dynamic walking and nature trails, which was opened to the public in 2017.

On the western boundary of the solar site is the Sottile Canal, a canal that flows into the north prong of the St. Sebastian River, a major tributary of the Indian River Lagoon. South of Micco Road west of the Canal is the new residential subdivision known as the Lakes at St. Sebastian Preserve, on land platted as Paladin Estates. The Lakes at St. Sebastian Preserve is located approximately 2.3 miles west of the Indian River. The single-family home community features new homes being built by two national homebuilders. The homes will have city water and septic, but the subdivision is outside the city limits of Sebastian in Brevard County. Several homes have been built in the community as of July 2020 but the street with lots that back onto the Sottile Canal (Lago Vista Drive) will be built in a later phase. Real estate salespeople for both builders noted that the view of the solar installation is primarily obstructed from the lots that will back to the Canal and there has been no impact on home sales or interest in the development due to its location proximate to the solar installation.

To the west of the solar site, south of Lakes at St. Sebastian Preserve, is state-owned land utilized for flood control.

<u>The Immediate Area:</u> The solar site is surrounded to the north and northeast primarily by the Barefoot Bay manufactured home community. Barefoot Bay is the largest manufactured home community in Florida where homes are permanently built, bought, and sold as real property. The community has three pools, a bar and restaurant, a golf course, and other recreational and entertainment activities.

The population of the Barefoot Bay community is estimated to be over 12,000 persons and approximately 80 percent of residents are over 55 years old, however, there is no age restriction in the community. The entire community sits on approximately 1,000 acres originally purchased and developed starting in 1968, with almost total absorption of lots by 1996. A total of 5,000 lots were platted and lots sizes currently range from 50 feet wide by 80 feet deep (4,000 square feet) to 75 feet wide by 100 feet deep (7,500 square feet). Homes are close together and with the standard setbacks, homes can be 15 feet apart from one another.

A longtime local real estate agent and community resident at Barefoot Bay Realty said that the homes that border the solar site to the northeast, along Papaya Circle, are considered perimeter lots and are more desirable due to the lack of backyard neighbors. There is a swale (a broad and shallow ditch with water) that separates the lots

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from the solar site and the agent noted that many people in the community are unaware that the solar site is even there. The prices and marketing times of home adjoining the solar farm on Papaya Circle in Barefoot Bay are not impacted by their proximity to the installation, and in fact may benefit from the increased privacy provided by the solar site.

The Barefoot Bay agent reported that small homes on small lots may sell for \$70,000 and larger homes on larger and better located lots can sell for over \$200,000. In the experience of Barefoot Bay Realty agents, there are typically 80 to 100 homes on the market at any one time and the average marketing time is considered to be 60 days.

### **Paired Sales Analysis**

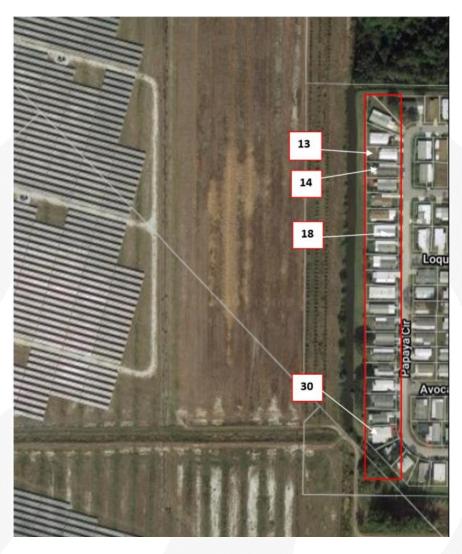
The maps on the following pages number the adjacent parcels for subsequent analysis. We have identified 13 sales that have transferred since the solar farm construction, Adjoining Properties 6, 7, 13, 14, 18, 30, 37, 40, 47, 50, 51, 76, and 86. Adjoining Property 14 was a liquidation sale and removed from consideration. Adjoining Properties 37 and 50 were never listed on the Multiple Listing Service (MLS) and are non-owner occupied and were eliminated from further consideration. Adjoining Property 30 has a large, converted patio and is atypical for Barefoot Bay, this property was considered an outlier and removed from analysis. While Adjoining Properties 76 and 86 are technically adjacent to the solar farm, they are atypical flag lots with driveways that operate as de facto roads. The residence for Adjoining Property 76 is buffered from the solar farm by two other residences. Adjoining property 86 is atypically larger than other sales in the market area and is approximately forty percent wetland. Adjoining Properties 76 and 86 were considered outliers and removed from the study.

The remaining seven parcels, Adjoining Properties 6, 7, 13, 18, 40, 47, and 51 were considered for a paired sales analysis. We have divided these properties into two groups as discussed further on the following pages.

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Barefoot Bay Solar Energy Center: Adjoining Properties



Barefoot Bay Solar Energy Center: Adjoining Properties - Insert A



Barefoot Bay Solar Energy Center: Adjoining Properties - Insert B



Barefoot Bay Solar Energy Center: Adjoining Properties - Insert C



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# Group 1

Adjoining Properties 6 and 7 are residential lots, purchased by the same buyer from two different sellers on different sale dates.

TEST AREA SALES GROUP 1								
Property #	Address	Sale Price	Site Size (AC)	Sale Price per Acre	Sale Date			
Adjoining Property 6	4655 Micco Rd	\$52,000	1.00	\$52,000	Sep-19			
Adjoining Property 7	4575 Micco Rd	\$57,000	1.00	\$54,500	Jul-19			

We identified seven Control Area Sales of residential land that sold from a reasonable sale time from the median sales date of the Test Area Sales. The Test Area Sales had a median marketing time of two to three months, as did the Control Area Sales. Control Area Sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or re-financings on the same properties. The results of our study are presented below.

CohnReznick Paired Sales Analysis Barefoot Bay Solar Energy Center GROUP 1						
No. of Sales	Adjusted Median Price per Acre					
Test Area Sales (2)	Yes: Adjoining Solar Farm	\$54,500				
Control Area Sales (7)	Control Area Sales (7) No: Not Adjoining Solar Farm					
Difference between Unit Price of Median Unit Price of 0	6.86%					



**Group 2** 

Adjoining Properties 13, 18, 40, 47, and 51 are improved residential dwellings in the Barefoot Bay subdivision.

	TEST AREA SALES GROUP 2									
Property #	Address	Median Sale Price	Median Beds	Median Baths	Median Year Built	Median Home Size (SF)	Improvements	Median Site Size (SF)	Median Sale Price/SF	Median Sale Date
Adjoining Properties 51, 40, 18, 47, 13	343 Papaya Circle, 419 Papaya Circle, 465 Papaya Circle, 403 Papaya Circle, 475 Papaya Circle	\$127,500	2	2.0	1986	1,324	Manufactured Homes	3,920	\$95.90	Jul-19

Since Barefoot Bay is a relatively homogenous subdivision with a large number of residences, we were able to identify 126 Control Area Sales located in the community. All the Control Area Sales are manufactured homes on residential lots, with gross living areas of 1,100 square feet to 1,800 square feet, that sold from a reasonable sale time from the median sales date of the Test Area Sales, excluding outliers and non-arm's length transactions. Barefoot Bay has a typical marketing time of two months. The Test Area Sales had a median marketing time of approximately 1.5 months. Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below.

CohnReznick Paired Sales Analysis Barefoot Bay Solar Energy Center GROUP 2						
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price per SF				
Test Area Sales (5)	Yes: Adjoining Solar Farm	\$95.90				
Control Area Sales (126)	No: Not Adjoining Solar Farm	\$93.95				
Difference between Unit Price of Median Unit Price of 0	2.07%					

The difference between the unit price of the Test Area Sales and the Adjusted Median Unit Price of the Control Area Sales for Groups 1 and 2, are considered within the range for a typical market area. Noting the relatively small price differential, in which the Test Area Sales were higher than the median for the Control Areas Sales, <u>it</u> does not appear that the Barefoot Bay Solar Energy Center had any negative impact on adjoining property values or marketing times.



# Summary of Before and After Construction of the Solar Farm Analysis:

Due to the frequency of sales in the Barefoot Bay subdivision, we were able to conduct an analysis on the prices of manufactured homes before the solar farm announcement date in comparison to the prices of manufactured homes after the construction of the solar farm. We have provided our conclusions from the data below and the following page contains a chart with the data.

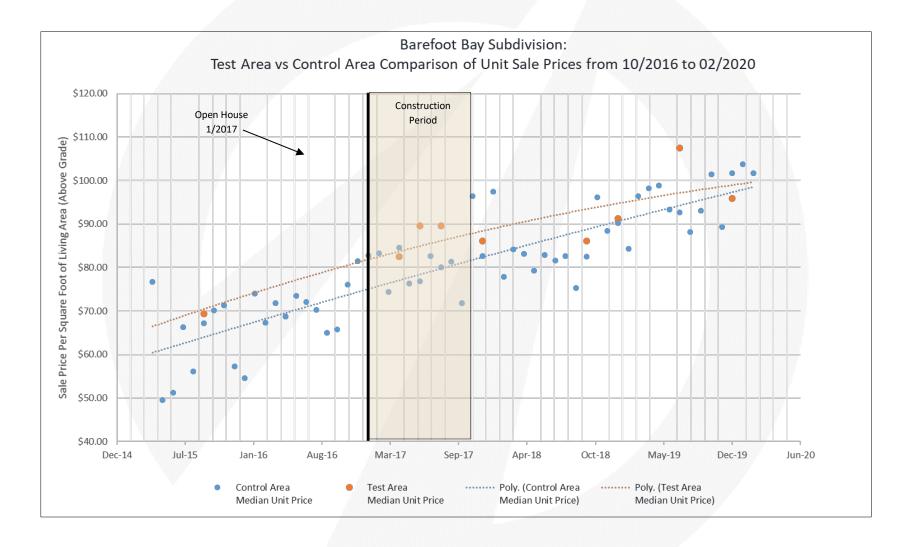
Nine Test Area sales and 903 Control Area Sales were identified from Q2 2015 to Q1 2020.

- ➤ The Test area sales (ORANGE) are located adjoining to the Barefoot Bay Solar Energy Center.
- ➤ The Control area sales (BLUE) are located in the remainder of the Barefoot Bay subdivision.

The dotted lines are polynomial trend lines plotted by Microsoft Excel in order to illustrate and approximate the "average" trend of each set of data. After construction of the solar farm, in parallel with the improving economic climate, it appears that unit prices for both the test and control areas appreciated at a similar rate over the period from Q2 2015 to Q1 2020. A difference in appreciation rates does not appear to exist between homes in the Test Area versus homes in the Control Area.

Sale prices of manufactured homes after the construction of the solar farm exhibit a similar appreciation trend as sales prior to the solar farm announcement. Overall, our findings indicate that there is not a consistent and measurable difference that exists in association with proximity to a solar farm.





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SOLAR FARM 11: MIAMI-DADE SOLAR ENERGY CENTER, MIAMI DADE COUNTY, FL

Coordinates: Latitude 25°38'34.5"N, 80°29'16.5"W

PIN: 30-5813-000-0020

Recorded Owner: Florida Power & Light Company

Total Land Size: 465 acres

**Date Project Announced:** October 2017

Date Project Completed: January 2019

Output: 74.5 MW AC



2020 Aerial imagery retrieved from Google Earth

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# **Overview and Surrounding Area:**

The Miami-Dade Solar Energy Center is situated in unincorporated Miami-Dade County, just west of Florida State Road 997. The site comprises approximately 300,000 solar panels on a fixed-tilt system, generating enough energy to power around 15,000 homes.

It is surrounded to the north, west, and south by rural residences and agricultural uses. The Kendall Tamiami Executive Airport is located due east, along the flight path for one of the airport's runways. A canal runs along the west side of the property, and beyond that is 306 acres of federal government land and four agricultural use lots. The predominant lot size in the surrounding area is approximately five acres and uses vary from palm tree farms, equestrian centers, citrus groves, to rural residences. These lots are zoned GU – Interim District, which categorizes land not otherwise specified in the unincorporated areas of Miami Dade County. This designation allows for uses consistent with the surrounding character, or a density of one residence for every 5 acres. <sup>18</sup> As such, development is limited to rural residences or agricultural uses

**Prior Use:** Agricultural use

Real Estate Tax Info: The chart below shows the increase from 2018 (before construction) to 2019 (after construction) in the assessed value of the parcels and the total real estate taxes.

PIN	Acres
Miami-Dade County 30-5813-000-0020	465.61
TOTAL	465.61

2018 Taxes Paid		20	19 Taxes Paid	Tax Increase	
\$	40,777	\$	179,761	341%	
\$	40,777	\$	179,761	341%	

2018 Assessed Value		20°	19 Assessed Value	Value Increase	
\$	2,460,316	\$	10,575,924	330%	
\$	2,460,316	\$	10,575,924	330%	



<sup>&</sup>lt;sup>18</sup> http://www.miamidade.gov/zoning/districts.asp

### Paired Sales Analysis - Residential Land

The following map numbers the adjoining parcels for subsequent analysis. The 39 adjoining parcels are a mix of single-family residences, agricultural land, and government land. We have identified five parcels that have transferred since the solar farm was completed, Adjoining Parcels 3, 13, 31, 33, and 35. Adjoining Properties 3 and 33 transferred as deed corrections between related parties and are not considered market sales. Adjoining Property 35 was bought by the owner of the adjoining parcel for assemblage purposes and was also removed from the study. The remaining three parcels, Adjoining Properties 13, 31, and 33 were considered for a paired sales analysis. These three parcels have an interim agricultural use with residential development allowed under the GU zoning.



Miami-Dade Solar Energy Center - Adjoining Properties



We identified six Control Area Sales similar in size from the surrounding area that sold from a reasonable sale time from the median sales date of the Test Sales. Control Area Sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or re-financings on the same properties. The results of our study are presented below.

CohnReznick Paired Sales Analysis Miami-Dade Solar Energy Center								
No. Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre						
Test Area Sales (3)	Yes: Adjoining solar farm	\$82,491						
Control Area Sales (6)	No: Not adjoining solar farm	\$81,866						
Difference between Unit Adjusted Median Unit F	0.76%							

Noting no negative price differential, it does not appear that the Miami-Dade Solar Energy Center impacted the sales prices of Adjoining Properties 13, 31, or 33.



#### SUMMARY OF ADJOINING USES

The table below summarizes the adjoining uses for each solar farm under study.

Composition of Surrounding Uses (% of Surrounding Acreage)										
Solar Farm #	Solar Farm	Acreage % of Surrounding Agricultural Uses	Acreage % of Surrounding Residential Uses	Acreage % of Surrounding Industrial Uses	Acreage % of Surrounding Office Uses	Acreage % of Surrounding Other Uses	Avg. Distance from Panels to Improvements (Feet)			
1	North Star	75.00%	15.00%	0.00%	0.00%	10.00%	325			
2	Innovative Solar 42	20.00%	25.00%	0.00%	0.00%	55.00%	405			
3	Rutherford Farm	10.00%	40.00%	10.00%	0.00%	40.00%	180			
4	DTE Lapeer	60.00%	35.00%	0.00%	0.00%	5.00%	260			
5	Elm City Solar	20.00%	15.00%	10.00%	0.00%	50.00%	295			
6	Shoreham Solar Commons	52.70%	30.90%	8.30%	0.00%	8.10%	275			
7	Woodland Solar	25.00%	5.00%	0.00%	0.00%	60.00%	615			
8	S-Power Shoreham Solar	87.00%	13.00%	0.00%	0.00%	0.00%	105			
9	Dominion Indy Solar III	97.70%	2.30%	0.00%	0.00%	0.00%	474			
10	Barefoot Bay Solar Energy Center	0.00%	9.71%	88.08%	0.00%	2.20%	734			
11	Miami-Dade Solar Energy Center	56.10%	10.00%	0.00%	0.00%	34.00%	915			

Overall, the majority of the surrounding acreage for each comparable solar farm is made up of agricultural land, some of which have homesteads. There are also smaller single-family home sites that adjoin the solar farms we have studied. We have found that these solar farms are sound comparables in terms of adjoining uses, location, and size.



#### MARKET COMMENTARY

Additionally, we have contacted market participants such as appraisers, brokers, and developers familiar with property values around solar farms. Commentary from our conversations with these market participants is recorded below.

Bill Nichols, Chief Appraiser with the Trumbull County Auditor in Ohio, stated that he has seen no effect on property values in properties near a solar farm and no one has come in to complain to the Auditor's office about an impact on their property value.

Beth Fritz, the Valuation Specialist in the Wood County, Ohio Auditor's office has seen no effect or impact on residential, commercial or agricultural property values on any properties with proximity to a solar farm.

Jarra Underwood, Wayne County Auditor in Ohio reported that she has seen no impact on property values due to their location near a solar farm. There is one solar fam in the county near residential properties and while it is not a highly sought after location, Underwood has still not seen an effect on those property values due to the nearby solar farm.

The Clark County, Kentucky Property Valuation Administrator, Jason Neely, noted there have been no complaints regarding East Kentucky Power Cooperative, Inc.'s Cooperative Solar One project installed in November 2017 located in the county, which has a capacity to generate 8.5 MW of electricity. Additionally, Neely stated he has not seen any evidence of lowered property values in the area and no reduction in assessed property values has been made due to proximity to the solar farm.

A Grant County, Kentucky Assessor stated that they have not seen a reduction in assessed property values or market values for adjacency to solar farms.

A McNairy County, Tennessee Assessor stated that they have not applied reductions to assessed value for adjacency to solar farms.

Christy Wingate, a real estate broker with Parker Real Estate Group, noted in her experience, the presence of a solar farm is neither an attraction nor a deterrant for nearby home buyers.

A Miami-Dade County, Florida Assessor stated that they do not reduce assessed property values for adjacency to Solar Farms.

A Putnam County, Florida Assessor stated that they have not seen a reduction in assessed value for adjacency to Solar Farms.

Renee Davis, Tax Administrator for Bladen County, North Carolina, stated that she has not seen any effect on property values due to proximity to a solar farm.

We spoke with Jim Brown, an appraiser for Scotland County, North Carolina, who stated that he has seen no effect on property values due to proximity to a solar farm.



We spoke with Gary Rose, a tax assessor for Duplin County, North Carolina, who stated that he has seen no effect on property values in regards to proximity to a solar farm.

Kathy Renn, a property Valuation Manager for Vance County, North Carolina, stated that she has not noticed any effect on property values due to proximity to a solar farm.

Larry Newton, a Tax Assessor for Anson County, North Carolina, stated that there are six solar farms in the county ranging from 20 to 40 acres and he has not seen any evidence that solar farms have had any effect on property values due to proximity to a solar farm.

We spoke with Patrice Stewart, a Tax Administrator for Pasquotank County, North Carolina, and she has seen no effect on land or residential property values due to proximity to the solar farms in Pasquotank County.

We spoke with the selling broker of the Adjoining Property for Elm City Solar, in North Carolina, Selby Brewer, who said the solar farm did not impact the buyer's motivation.

We spoke with Amy Carr, Commissioner of Revenue in Southampton County, Virginia, who stated that most of the solar farms are in rural areas but she has not seen any effect or made any adjustments on property values. They have evaluated the solar farm land considering a more intense use, which increased the assessed value.

We spoke with Ken Surface, a Senior Vice President of Nexus Group. Nexus Group is a large valuation group in Indiana and has been hired by 20 counties in Indiana regarding property assessments. Mr. Surface is familiar with the solar farm sites in Harrison County (Lanesville Solar Farm) and Monroe County (Ellettsville Solar Farm) and stated he has noticed no impact on property values from proximity to these sites.

We interviewed Missy Tetrick, a Commercial Valuation Analyst for the Marion County Indiana Assessor. She mentioned the Indy Solar III sites and stated that she saw no impact on land or property prices from proximity to this solar farm.

We spoke with Dorene Greiwe, Decatur County Indiana Assessor, and she stated that solar farms have only been in the county a couple of years, but she has seen no impact on land or property prices due to proximity to this solar farm.

Connie Gardner, First Deputy Assessor for Madison County Indiana, stated that there are three solar farms in her county, and she has seen no impact on land or property prices due to proximity to these solar farms.

We spoke with Tara Shaver, Director of Administration for Marion County, Indiana Assessor/Certified Assessor, and she stated that she has seen no impact on land or property prices due to proximity to solar farms.

Dan Squyres, Chisago County Tax Assessor, confirmed that the Chisago County Assessor's Office completed their own study on property values adjacent to and in close vicinity to the solar farm from January 2016 to October



2017. From the study, the assessor determined the residential homes adjacent to the North Star Solar Farm were in-line with the market and were appreciating at the same rate as the market. 19

Candace Rindahl of ReMax Results, a real estate broker with 16 years of experience in the North Branch, Minnesota area, said that she has been in most of the homes surrounding the North Star Solar Farm and personally sold two of them. She reported that the neighboring homes sold at market rates comparable to other homes in the area not influenced by the solar farm, and they sold within 45 days of offering, at the end of 2017, which was in line with the market.

19 Chisago County Press: County Board Real Estate Update Shows No "Solar Effects" (11/03/2017)

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### SOLAR FARM FACTORS ON HARMONY OF USE

The data from the solar farms included in this Property Value Impact Study, clearly indicates that solar farms are generally a compatible use with agricultural and residential uses.

The following section analyzes specific physical characteristics of solar farms and is based on research and our solar farm site visits.

Appearance: Most solar panels have a similar appearance to a greenhouse or single-story residence can range from 8 to 20 feet, but are usually not more than 15 feet high. As previously mentioned, developers generally surround a solar farm with a fence and often leave existing perimeter foliage, which minimizes the visibility of the solar farm. The physical characteristics of solar farms are compatible with adjoining agricultural and residential uses.

Sound: Solar panels in general are effectively silent and sound levels are minimal, like ambient sound. There are limited sound-emitting pieces of equipment on-site, which only produce a guiet hum (e.g. substation). However, these sources are not typically heard outside the solar farm perimeter fence.

**Odor:** Solar panels do not produce any byproduct or odor.

Greenhouse Gas (GHG) Emissions: Much of the GHG produced in the United States is linked to the combustion of fossil fuels, such as coal, natural gas, and petroleum, for energy use. Generating renewable energy from operating solar panels for energy use does not have significant GHG emissions, promoting cleaner air and reducing carbon dioxide (CO<sub>2</sub>) emissions to fight climate change.

Traffic: The solar farm requires minimal daily onsite monitoring by operational employees and thus minimal operational traffic.

Hazardous Material: Modern solar panel arrays are constructed to U.S. government standards. Testing shows that modern solar modules are both safe to dispose of in landfills, and are also safe in worst case conditions of abandonment or damage in a disaster.<sup>20</sup> Reuse or recycling of materials would be prioritized over disposal. Recycling is an area of significant focus in the solar industry, and programs for both batteries and solar panels are advancing every year. While the exact method of recycling may not be known yet as it is dependent on specific design and manufacturer protocol, the equipment is designed with recyclability of its components in mind, and it is likely that solar panel and battery energy storage recycling and reuse programs will only improve in 25 years' time.

Examples of homes built adjoining to solar farms are presented on the following pages.



<sup>&</sup>lt;sup>20</sup> Virginia Solar Initiative - Weldon Cooper Center for Public Service - University of Virginia (https://solar.coopercenter.org/taxonomy/term/5311)



Innovative Solar 42 (2017) Cumberland County, NC



Innovative Solar 42 (2019) Cumberland County, NC

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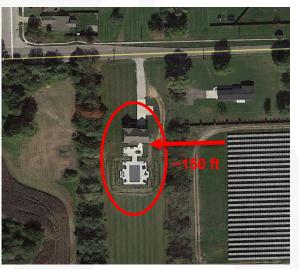


**Developer Built Home** Sold 6/18/19 for \$265,900 (\$110.75/sf) Cumberland County, NC (adjacent to Innovative 42 solar farm)

For the solar farm Dominion Indy III, the adjacent land to the west was acquired and subsequently developed with a large estate home – after the solar panels had been in operation for years.



Dominion Indy III Solar Farm September 2014



Dominion Indy III Solar Farm October 2016



Estate home adjacent to Dominion Indy III Solar Farm On-site pool and attached garage (home cost estimated at \$450,000 - October 2015)



### SUMMARY AND FINAL CONCLUSIONS

We have reviewed published methodology for measuring impact on property values as well as published studies that analyzed the impact of solar farms on property values. We have also interviewed market participants to give us additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm. These studies found little to no measurable and consistent difference between the Test Area Sales and the Control Area Sales attributed to the solar farms. We then can conclude that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the solar farm, that properties surrounding other proposed solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short- or long-term periods.

The purpose of this property value impact study is to determine whether the presence of a solar farm has caused a measurable and consistent difference in values between the Test Area Sales and the Control Area Sales. A summary of our findings for the paired sales analyses is presented below, which analyzes all of the improved homes, and then an additional analysis summarizing the impact on adjacent residential lots and farmland.

CohnReznick Solar Analysis Conclusions									
Solar Farm No.	Solar Farm	Number of Test Area Sales	Number of Control Area Sales	Median Adjoining Property Sale Price per Unit (Test Area Sales)	Median Control Area Sales Price per Unit	Difference (%)	Avg. Feet from Panel to Lot	Avg. Feet from Panel to House	Impact Found
ingle-	Family Residential								
1	North Star Solar Group 1	3	11	\$151.93	\$139.50	+8.91%	123	358	No Impact
	North Star Solar Group 2	1	10	\$119.82	\$118.72	+0.92%	152	225	No Impact
	North Star Solar Group 3*	1	6						
2	Innovative Solar 42 Group 1	1	7	\$107.09	\$100.18	+6.91%	215	405	No Impact
	Innovative Solar 42 Group 2	1	7	\$111.77	\$105.34	+6.10%	240	300	No Impact
3	Rutherford Farm	1	6	\$53.46	\$52.49	+1.85%	135	180	No Impact
4	DTE Lapeer Solar Group 1	3	7	\$86.12	\$85.92	+0.24%	220	260	No Impact
	DTE Lapeer Solar Group 2	1	4	\$94.84	\$91.80	+3.31%	165	250	No Impact
5	Elm City Solar	1	8	\$56.60	\$55.57	+1.85%	255	295	No Impact
6	Shoreham Solar Commons	1	5	\$166.67	\$161.08	+3.47%	110	480	No Impact
7	Woodland Solar	1	5	\$144.63	\$137.76	+4.99%	420	615	No Impact
8	S-Power Shoreham Solar Group 1	1	5	\$202.92	\$194.56	+4.30%	180	240	No Impact
	S-Power Shoreham Solar Group 2	1	5	\$197.06	\$173.68	+13.46%	135	215	No Impact
9	Indy Solar III Group 2	4	8	\$59.10	\$57.84	+2.18%	240	350	No Impact
	Indy Solar III Group 3	7	11	\$72.15	\$71.69	+0.65%	165	300	No Impact
10	Barefoot Bay Solar Energy Center Group 2	5	126	\$95.90	\$93.95	+2.07%	675	750	No Impact
edian	Variance in Sale Prices for Test Area Sales	to Control Are	ea Sales			+3.31%	400000000000000000000000000000000000000		

<sup>33</sup> Adjoining Test Area Sales studied and compared to 231 Control Area Sales

<sup>\*</sup> Note, the paired sale analyais for this group is an outlier as determined earlier in this report and was excluded from this summary table.

Land (Agricultural/Single Family Lots)										
9	Indy Solar III Group 1	1	4	\$8,210	\$8,091	+1.47%	280	-	No Impact	
10	Barefoot Bay Solar Energy Center Group 1	2	7	\$54,500	\$51,000	+6.86%	475	-	No Impact	
11	Miami-Dade Solar Energy Center	3	6	\$82,491	\$80,686	+0.76%	766	-	No Impact	
Median	Variance in Sale Prices for Test to Control			+1.47%						

<sup>6</sup> Adjoining Test Area Sale studied and compared to 17 Control Area Sales

One of the paired sale analyses, Group 2 of S-Power Shoreham Solar, initially reflected a 13.46 percent difference in adjusted median price per square foot between the test home sale and the five control sales. Upon further testing, the direct matched pair sale, using one of the control sales, which was most similar to the adjacent test home, reflected a differential of 3.35 percent, which is more consistent with the range we see in typical



impact studies and does not result in any demonstration of negative property value influence associated with the operating adjacent solar farm.

All of the solar farms under study reflected sales of property adjoining an existing solar farm in which the unit sale prices were effectively the same or higher than the comparable Control Area sales that were not near a solar farm. The conclusions support that there is no negative impact for improved residential homes adjacent to solar, nor for residential development lots or agricultural acreage.



Based upon our examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that no consistent negative impact has occurred to adjacent property that could be attributed to proximity to the adjacent solar farm, with regard to unit sale prices or other influential market indicators. Additionally, in our workfile we have retained analyses of additional test subjects, each with their own set of matched control sales, which had consistent results, indicating no consistent and measurable impact on adjacent property values. This conclusion has been confirmed by numerous county assessors who have also investigated this use's potential impact on property values.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick LLP

Andrew R. Lines, MAI

Will.

Principal - Valuation Advisory Services Certified General Real Estate Appraiser

Florida License No. RZ3899

Expires 11/30/2022

Indiana License No. CG41500037

Expires 6/30/2022

Kentucky License 5663

Expires 6/30/2021

Georgia License No. 360939

Expires 10/31/2021

Ohio License No. 2019001053

Issued 3/25/2019

Patricia L. McGarr, MAI, CRE, FRICS

Patricia & MC

National Director - Valuation Advisory Services

Certified General Real Estate Appraiser

Indiana License No. CG49600131

Expires 6/30/2022

North Carolina License No. A8131

Expires 6/30/2021

Virginia License No. 4001016998

Expires 3/31/2022

Michigan License No. 1201072979

Expires 7/31/2022



#### CERTIFICATION

We certify that, to the best of our knowledge and belief:

- 1. The statements of fact and data reported are true and correct.
- 2. The reported analyses, findings, and conclusions in this consulting report are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, findings, and conclusions.
- 3. We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
- 4. We have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- 5. We have no bias with respect to the property that is the subject of this report or the parties involved with this assignment.
- 6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- 7. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value finding, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- 8. Our analyses, findings, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which includes the Uniform Standards of Professional Appraisal Practice (USPAP).
- 9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- 10. Patricia L. McGarr, MAI, CRE, FRICS and Andrew R. Lines, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.
- 11. We have not relied on unsupported conclusions relating to characteristics such as race, color, religion, national origin, gender, marital status, familial status, age, and receipt of public assistance income, handicap, or an unsupported conclusion that homogeneity of such characteristics is necessary to maximize value.
- 12. Sonia K. Singh, MAI, Michael F. Antypas, TJ Schemmel, and Amanda G. Edwards provided consulting assistance to the persons signing this certification, including data verification, research, and administrative work all under the appropriate supervision.
- 13. We have experience in reviewing properties similar to the subject and are in compliance with the Competency Rule of USPAP.
- 14. As of the date of this report, Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Sonia K. Singh, MAI have completed the continuing education program for Designated Members of the Appraisal Institute.



If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

With

CohnReznick LLP

Andrew R. Lines, MAI Principal - Valuation Advisory Services Certified General Real Estate Appraiser

Florida License No. RZ3899 Expires 11/30/2022 Indiana License No. CG41500037 Expires 6/30/2022 Kentucky License 5663 Expires 6/30/2021 Georgia License No. 360939 Expires 10/31/2021 Ohio License No. 2019001053 Issued 3/25/2019

Patricia L. McGarr, MAI, CRE, FRICS National Director - Valuation Advisory Services Certified General Real Estate Appraiser

Patricia & Mcyars

Indiana License No. CG49600131 Expires 6/30/2022 North Carolina License No. A8131 Expires 6/30/2021 Virginia License No. 4001016998 Expires 3/31/2022 Michigan License No. 1201072979 Expires 7/31/2022

#### ASSUMPTIONS AND LIMITING CONDITIONS

The fact witness services will be subject to the following assumptions and limiting conditions:

- 1. No responsibility is assumed for the legal description provided or for matter pertaining to legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated. The legal description used in this report is assumed to be correct.
- 2. The property is evaluated free and clear of any or all liens or encumbrances unless otherwise stated.
- Responsible ownership and competent management are assumed. 3.
- 4. Information furnished by others is believed to be true, correct and reliable, but no warranty is given for its accuracy.
- 5. All engineering studies are assumed to be correct. The plot plans and illustrative material in this report are included only to help the reader visualize the property.
- 6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
- 7. It is assumed that the property is in full compliance with all applicable federal, state, and local and environmental regulations and laws unless the lack of compliance is stated, described, and considered in the evaluation report.
- 8. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in the evaluation report.
- 9. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- 10. It is assumed that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
- 11. The date of value to which the findings are expressed in this report apply is set forth in the letter of transmittal. The appraisers assume no responsibility for economic or physical factors occurring at some later date which may affect the opinions herein stated.
- 12. Unless otherwise stated in this report, the existence of hazardous materials, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such substances on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, radon gas, lead or lead-based products, toxic waste contaminants, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the



- assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.
- 13. The forecasts, projections, or operating estimates included in this report were utilized to assist in the evaluation process and are based on reasonable estimates of market conditions, anticipated supply and demand, and the state of the economy. Therefore, the projections are subject to changes in future conditions that cannot be accurately predicated by the appraisers and which could affect the future income or value projections.
- 14. Fundamental to the appraisal analysis is the assumption that no change in zoning is either proposed or imminent, unless otherwise stipulated. Should a change in zoning status occur from the property's present classification, the appraisers reserve the right to alter or amend the value accordingly.
- 15. It is assumed that the property does not contain within its confined any unmarked burial grounds which would prevent or hamper the development process.
- 16. The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have not made a specific compliance survey and analysis of the property to determine if it is in conformance with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect on the value of the property. Unless otherwise noted in this report, we have not been provided with a compliance survey of the property. Any information regarding compliance surveys or estimates of costs to conform to the requirements of the ADA are provided for information purposes. No responsibility is assumed for the accuracy or completeness of the compliance survey cited in this report, or for the eventual cost to comply with the requirements of the ADA.
- 17. Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in this report.
- 18. Any proposed improvements are assumed to have been completed unless otherwise stipulated; any construction is assumed to conform with the building plans referenced in this report.
- 19. Unless otherwise noted in the body of this report, this evaluation assumes that the subject does not fall within the areas where mandatory flood insurance is effective.
- 20. Unless otherwise noted in the body of this report, we have not completed nor are we contracted to have completed an investigation to identify and/or quantify the presence of non-tidal wetland conditions on the subject property.
- 21. This report should not be used as a basis to determine the structural adequacy/inadequacy of the property described herein, but for evaluation purposes only.
- 22. It is assumed that the subject structure meets the applicable building codes for its respective We assume no responsibility/liability for the inclusion/exclusion of any structural



- component item which may have an impact on value. It is further assumed that the subject property will meet code requirements as they relate to proper soil compaction, grading, and drainage.
- 23. The appraisers are not engineers, and any references to physical property characteristics in terms of quality, condition, cost, suitability, soil conditions, flood risk, obsolescence, etc., are strictly related to their economic impact on the property. No liability is assumed for any engineering-related issues.

The evaluation services will be subject to the following limiting conditions:

- 1. The findings reported herein are only applicable to the properties studied in conjunction with the Purpose of the Evaluation and the Function of the Evaluation as herein set forth; the evaluation is not to be used for any other purposes or functions.
- 2. Any allocation of the total value estimated in this report between the land and the improvements applies only to the stated program of utilization. The separate values allocated to the land and buildings must not be used in conjunction with any other appraisal and are not valid if so used.
- No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have 3. assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in the evaluation.
- 4. This report has been prepared by CohnReznick under the terms and conditions outlined by the enclosed engagement letter. Therefore, the contents of this report and the use of this report are governed by the client confidentiality rules of the Appraisal Institute. Specifically, this report is not for use by a third party and CohnReznick is not responsible or liable, legally or otherwise, to other parties using this report unless agreed to in writing, in advance, by both CohnReznick and/or the client or third party.
- 5. Disclosure of the contents of this evaluation report is governed by the by-laws and Regulations of the Appraisal Institute has been prepared to conform with the reporting standards of any concerned government agencies.
- 6. The forecasts, projections, and/or operating estimates contained herein are based on current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. These forecasts are, therefore, subject to changes with future conditions. This evaluation is based on the condition of local and national economies, purchasing power of money, and financing rates prevailing at the effective date of value.
- 7. This evaluation shall be considered only in its entirety, and no part of this evaluation shall be utilized separately or out of context. Any separation of the signature pages from the balance of the evaluation report invalidates the conclusions established herein.
- 8. Possession of this report, or a copy thereof, does not carry with it the right of publication, nor may it be used for any purposes by anyone other than the client without the prior written consent of the appraisers, and in any event, only with property qualification.



- 9. The appraisers, by reason of this study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made.
- 10. Neither all nor any part of the contents of this report shall be conveyed to any person or entity, other than the appraiser's client, through advertising, solicitation materials, public relations, news, sales or other media, without the written consent and approval of the authors, particularly as to evaluation conclusions, the identity of the appraisers or CohnReznick, LLC, or any reference to the Appraisal Institute, or the MAI designation. Further, the appraisers and CohnReznick, LLC assume no obligation, liability, or accountability to any third party. If this report is placed in the hands of anyone but the client, client shall make such party aware of all the assumptions and limiting conditions of the assignment.
- 11. This evaluation is not intended to be used, and may not be used, on behalf of or in connection with a real estate syndicate or syndicates. A real estate syndicate means a general or limited partnership, joint venture, unincorporated association or similar organization formed for the purpose of, and engaged in, an investment or gain from an interest in real property, including, but not limited to a sale or exchange, trade or development of such real property, on behalf of others, or which is required to be registered with the United States Securities and Exchange commissions or any state regulatory agency which regulates investments made as a public offering. It is agreed that any user of this evaluation who uses it contrary to the prohibitions in this section indemnifies the appraisers and the appraisers' firm and holds them harmless from all claims, including attorney fees, arising from said use.

**ADDENDUM A: APPRAISER QUALIFICATIONS** 

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# Patricia L. McGarr, MAI, CRE, FRICS, CRA Principal, National Director, Valuation Advisory Services

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5802 patricia.mcgarr@cohnreznick.com www.cohnreznick.com

Patricia L. McGarr, MAI, CRE, FRICS, CRA, is a principal and National Director of CohnReznick Advisory Group's Valuation Advisory Services practice who is based in Chicago. Pat's experience includes market value appraisals of varied property types for acquisition, condemnation, mortgage, estate, ad valorem tax, litigation, zoning, and other purposes. Pat has been involved in the real estate business since 1980. From June 1980 to January 1984, she was involved with the sales and brokerage of residential and commercial properties. Her responsibilities during this time included the formation, management, and training of sales staff in addition to her sales, marketing, and analytical functions. Of special note was her development of a commercial division for a major Chicago-area brokerage firm.

Since January 1984, Pat has been exclusively involved in the valuation of real estate. Her experience includes the valuation of a wide variety of property types including residential, commercial, industrial, and special purpose properties including such diverse subjects as quarries, marinas, riverboat gaming sites, shopping centers, manufacturing plants, and office buildings. She is also experienced in the valuation of leasehold and leased fee interests. Pat has performed appraisal assignments throughout Illinois and the Chicago Metropolitan area as well as Wisconsin, Indiana, Michigan, New York, New Jersey, California, Nevada, Florida, Utah, Texas, and Ohio. Pat has gained substantial experience in the study and analysis of the establishment and expansion of sanitary landfills in various metropolitan areas including the preparation of real estate impact studies to address criteria required by Senate Bill 172. She has also developed an accepted format for allocating value of a landfill operation between real property, landfill improvements, and franchise (permits) value.

Over the past several years. Pat has developed a valuation group that specializes in serving utility companies establish new utility corridors for electric power transmission and pipelines. This includes determining acquisition budgets, easement acquisitions, and litigation support. Pat has considerable experience in performing valuation impact studies on potential detrimental conditions and has studied properties adjoining landfills, waste transfer stations, stone quarries, cellular towers, schools, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises.

Pat has qualified as an expert valuation witness in numerous local, state and federal courts.



Pat has participated in specialized real estate appraisal education and has completed more than 50 courses and seminars offered by the Appraisal Institute totaling more than 600 classroom hours, including real estate transaction courses as a prerequisite to obtaining a State of Illinois Real Estate Salesman License.

Pat has earned the professional designations of Counselors of Real Estate (CRE), Member of the Appraisal Institute (MAI), Fellow of Royal Institution of Chartered Surveyors (FRICS) and Certified Review Appraiser (CRA). She is also a certified general real estate appraiser with active licenses in numerous states.

# **Education**

North Park University: Bachelor of Science, General Studies

## **Professional Affiliations**

- National Association of Realtors
- CREW Commercial Real Estate Executive Women
- IRWA International Right of Way Association

### **Appointments**

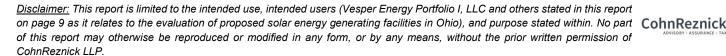
Appointed by the Governor in 2017 to the State of Illinois' Department of Financial & Professional Regulation's Real Estate Appraisal Board; Vice-Chairman - 2018

## **Licenses and Accreditations**

- Member of the Appraisal Institute (MAI)
- Counselors of Real Estate, designated CRE
- Fellow of Royal Institution of Chartered Surveyors (FRICS)
- Certified Review Appraiser (CRA)
- Alabama State Certified General Real Estate Appraiser
- California State Certified General Real Estate Appraiser
- Connecticut State Certified General Real Estate Appraiser
- District of Columbia State Certified General Real Estate Appraiser
- Illinois State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- Louisiana State Certified General Real Estate Appraiser
- Maryland State Certified General Real Estate Appraiser
- Massachusetts State Certified General Real Estate Appraiser
- Michigan State Certified General Real Estate Appraiser
- Nevada State Certified General Real Estate Appraiser
- New Jersey State Certified General Real Estate Appraiser
- New York State Certified General Real Estate Appraiser
- North Carolina State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- South Carolina State Certified General Real Estate Appraiser
- Tennessee State Certified General Real Estate Appraiser



- Texas State Certified General Real Estate Appraiser
- Virginia State Certified General Real Estate Appraiser
- Wisconsin State Certified General Real Estate Appraiser







# Andrew R. Lines, MAI Principal – Real Estate Valuation, Valuation Advisory Services

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5892 andrew.lines@cohnreznick.com www.cohnreznick.com

Andrew R. Lines, MAI, is a principal for CohnReznick Advisory Group's Valuation Advisory practice who is based in the Chicago office and has been a CohnReznick employee for over six years. Andrew has been involved in the real estate business for more than 15 years and has performed valuations on a wide variety of real property types including single- and multi-unit residential (including LIHTC), student housing, office, retail, industrial, mixed-use and special purpose properties including landfills, waste transfer stations, marinas, hospitals, universities, telecommunications facilities, data centers, self- storage facilities, racetracks, CCRCs, and railroad corridors. He is also experienced in the valuation of leasehold, leased fee, and partial interests, as well as purchase price allocations (GAAP, IFRS and IRC 1060) for financial reporting.

Valuations have been completed nationwide for a variety of assignments including mortgage financing, litigation, tax appeal, estate gifts, asset management, workouts, and restructuring, as well as valuation for financial reporting including purchase price allocations (ASC 805), impairment studies, and appraisals for investment company guidelines and REIS standards. Andrew has qualified as an expert witness, providing testimony for eminent domain cases in the states of IL and MD. Andrew has also performed appraisal review assignments for accounting purposes (audit support), asset management, litigation and as an evaluator for a large Midwest regional bank.

Andrew has earned the professional designation of Member of the Appraisal Institute (MAI). He has also qualified for certified general commercial real estate appraiser licenses in Arizona, California, Maryland, Florida, Wisconsin, Georgia, Illinois, Indiana, New Jersey and New York. Temporary licenses have been granted in Connecticut, Colorado, Ohio, Indiana, Idaho, Kansas, Minnesota and South Carolina.

# **Education**

Syracuse University: Bachelor of Fine Arts

### **Professional Affiliations**

- Chicago Chapter of the Appraisal Institute Alternate Regional Representative (2016 2018)
- International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)

#### **Community Involvement**

- Chicago Friends School Treasurer
- Syracuse University Regional Council Active Member

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# Sonia K. Singh, MAI

# Senior Manager – Real Estate Valuation

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Sonia K. Singh, MAI is a senior manager in CohnReznick Advisory Group's Valuation Advisory practice and based in the Bethesda office. For the past nine years, she has engaged in real estate valuation and other real estate consulting services and valued over \$5 billion in real property.

Sonia is adept at valuing a variety of commercial real estate across the United States, including the following complex property types: athletic clubs; full-service hotels and beach resorts; marinas; historic redevelopment projects; recycling facilities; single-family rental home portfolios; master planned communities; and for-sale residential units or subdivisions. She has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. She has performed these and other appraisals others for purposes including financial reporting, estate planning, gift and estate tax. bond and conventional financing, litigation (eminent domain), and asset management, with the ability to handle appraisals of large portfolios in expedited timeframes. With significant experience in the appraisal of senior living facilities including continuing care retirement communities, skilled nursing facilities, assisted living and memory care facilities, as well as age-restricted housing, Ms. Singh has elevated the firm's modelling of complex healthcare property ownership structures to help illuminate debt/income and lease coverage ratios for federal courts, resulting in millions of dollars in recovered credits for clients.

Additionally, Sonia is experienced in purchase price allocations (GAAP, IFRS, and IRC 1060) for financial reporting, including the early adoption of ASU 2017-01. She has also provided valuation services related to highest and best use analysis, market feasibility studies, and useful life analysis. She has prepared impact studies measuring the possible detrimental impact of economic and environmental influences on property values, including those related to high-voltage transmission lines, distribution warehouses, and solar farms. She has provided expert witness testimony at local county zoning hearings for proposed solar energy uses and their potential detrimental impacts on adjacent property values.

# **Education**

University of Illinois: Bachelor of Science, Actuarial Science



## **Professional Affiliation, Licenses, and Exams**

- MAI Appraisal Institute, Designated Member
- Urban Land Institute, Associate Member
- Certified General Real Estate Appraiser with Active Licenses in DC and the States of MD, MO, and VA
- Successful completion of the following actuarial exams: Probability (1/P), Financial Mathematics (2/FM), and Models for Financial Economics (3/MFE)

# **Awards and Recognitions**

2019 National Association of Certified Valuators and Analysts (NACVA) and the Consultants Training Institute (CTI) 40 Under Forty Honoree



# Michael F. Antypas

# Senior Consultant, Valuation Advisory Services

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Michael Antypas is a senior consultant in CohnReznick Advisory Group's Valuation Advisory Services practice and is based in the Bethesda office. He has assisted other associates and appraisers in the valuation of a variety of retail shopping centers, hotels, market rate and restricted rental apartment properties. Class A office complexes with GSA tenants, mixed-use properties, developable land, and single-family rental home portfolios owned by REITs. He has also completed solar farm impact studies, appraisals for eminent domain disputes, as well as purchase price allocations on various senior living facilities, medical office buildings, and retail centers. In addition, Michael is certified in working with Argus Enterprise valuation software. He is a practicing affiliate in the Appraisal Institute and is working towards becoming a Certified General Real Estate Appraiser.

He graduated from the Villanova School of Business in May of 2016. Some of his other experience working in Real Estate originated through interning with commercial brokers. Throughout his senior year in college, Michael interned with Newmark Grubb Knight Frank as a Capital Markets intern. There he helped create and revise many marketing packages for the firm's senior managing directors. He also assisted in developing underwriting models and projections for offering memorandums. He also worked with a boutique restaurant broker in Washington D.C, Papadopoulos Properties where he compiled market research for his client's use and surveyed prospective restaurants to gauge their interest in expanding to the Washington D.C. market.

#### **Education**

Villanova University: Bachelor of Business Administration, Finance and Real Estate, Minor in Business **Analytics** 

### **Certifications**

**Argus Enterprise Certified** 

# **Professional Affiliations**

Appraisal Institute, Practicing Affiliate



# TJ Schemmel

# Senior Consultant, Valuation Advisory Services

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TJ Schemmel is a senior consultant in CohnReznick Valuation Advisory Services practice and is based in the Chicago office.

Since 2018, TJ has completed real estate valuations and other real estate consulting services for real property valued at over \$2 billion. TJ has acquired competency in valuing a variety of commercial real estate across the United States, including the following complex property types: full-service hotels, single-family rental home portfolios, cannabis cultivation facilities, hospitals, utility corridors, and for-sale residential units or subdivisions. He has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. He has performed these and other appraisals for purposes including financial reporting, estate planning, bond and conventional financing, litigation (eminent domain and LaSalle Factors), and asset management, with the ability to handle complex appraisals in expedited timeframes. TJ has also participated in assignments to determine the highest and best use of properties, including determining the value of the properties under potential zoning designations and determining the likelihood of potential rezoning.

Prior to joining CohnReznick, TJ was a financial analyst at Avison Young, specializing in office tenant representation and land development. Over five years in this position, TJ participated in office lease negotiations and real estate transactions for companies ranging in size from small start-ups to large multinational corporations. He also supported the land development team on numerous multifamily and office projects for Chicago based investors.

# **Education**

University of Cincinnati: Bachelor of Business Administration

# **Licenses and Affiliations**

- Licensed Associate Real Estate Trainee Appraiser in Illinois (Thomas Schemmel)
- Practicing Affiliate of the Appraisal Institute (Thomas Schemmel)
- Chicago Tutoring Associate Board Member



# Amanda G. Edwards

# Consultant, Valuation Advisory Services

200 S. Wacker Drive, Suite 2600 Chicago, Illinois 60606 312-508-5453 amanda.edwards@cohnreznick.com www.cohnreznick.com

Amanda Edwards is a consultant in CohnReznick's Valuation Advisory Services practice group and is based in Chicago. Amanda has assisted other appraisers in the valuation of a variety of industrial properties, medical offices, hotels, multifamily properties, condominium developments, retail and mixed-use properties, developable and open space land, and single-family subdivisions. She has also assisted with appraisals and continuing consulting for eminent domain litigation. Additionally, Amanda has provided audit support for Assurance clients of the firm. Amanda is a licensed Associate Real Estate Trainee Appraiser in Illinois, working toward becoming a Certified General Real Estate Appraiser.

Before joining CohnReznick, Amanda worked at the Inland Group of companies valuing properties and underwriting, as well as assisting in the closing of, commercial mortgage loans, nationwide. Property types included industrial, office, multi-family, retail, and hotel, with an emphasis on value-add properties and new construction projects. Amanda has also worked as a commercial lender for builder-developer housing at Fifth Third Bank, specializing in the Chicago metro area. She has also worked valuing senior housing properties and associated business models for acquisition purposes at a senior housing developer/operator.

Amanda has spent considerable time in the consulting environment, developing and conducting in-depth interviews for primary research in a variety of industries such as technology, financial institutions, and industrial manufacturing for private equity clients.

# **Education**

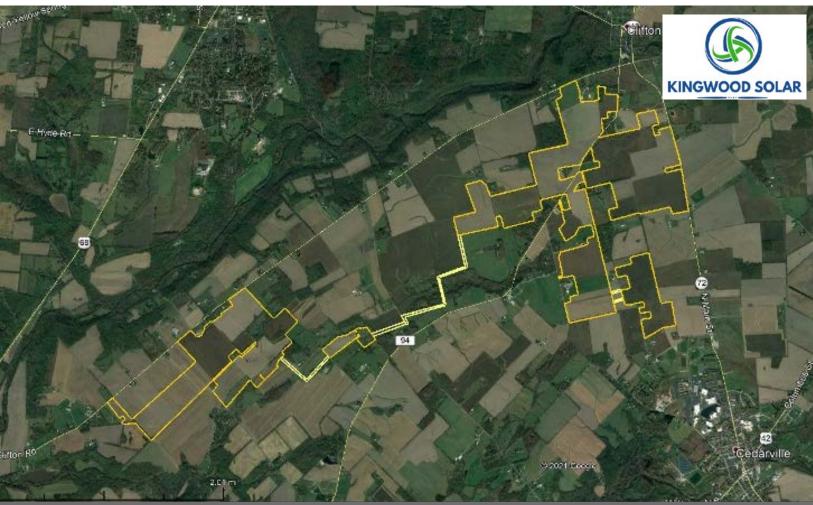
Bryn Mawr College, Bachelor of Arts

# **Licenses and Affiliations**

- Licensed Associate Real Estate Trainee Appraiser in Illinois
- Practicing Affiliate Appraisal Institute
- Chicago Real Estate Council Member







# PROPERTY VALUE IMPACT STUDY

# IMPACT STUDY OF PROPERTY VALUES ADJACENT TO SOLAR

Site Specific Analysis Addendum Report:

For the Proposed Kingwood Solar Project to be Located in Miami, Xenia and Cedarville Townships, in unincorporated Greene County, Ohio

### **PREPARED FOR:**

Mr. Dylan Stickney Kingwood Solar I, LLC Vesper Energy Portfolio I, LLC 906 W. McDermitt Drive Suite 116-366 Allen, TX 75013

April 8, 2021

# **SUBMITTED BY:**

CohnReznick LLP Valuation Advisory Services 200 S. Wacker Drive, Suite 2600 Chicago, Illinois 60606 (312) 508-5900

Andrew R. Lines, MAI
Patricia L. McGarr, MAI, CRE, FRICS

## LETTER OF TRANSMITTAL

April 8, 2021

Mr. Dylan Stickney **Development Manager** Kingwood Solar I, LLC Vesper Energy Portfolio I, LLC 906 W. McDermitt Drive Suite 116-366 Allen, TX 75013

SUBJECT: Addendum - Property Value Impact Study

Proposed Kingwood Solar I, LLC Project

Miami, Xenia, and Cedarville Townships, Greene County, OH

Dear Mr. Stickney:

This letter and associated report are considered an Addendum to the previously prepared property value impact study report with an effective date of April 8, 2021 ("Primary Report"). All facts and circumstances surrounding the property value impact study that analyzes existing solar farm and any effect on adjacent property values are contained within the cited Primary Report. This Addendum cannot be properly understood without the cited Primary Report and should be reviewed in unison.

Per the client's request, we have researched and inspected the area around the proposed solar farm on land located in Miami, Xenia, and Cedarville Townships, in unincorporated Greene County, Ohio. The proposed solar use, called Kingwood Solar, will have a capacity of 175 MW AC (megawatts alternating current).

The purpose of the assignment is to determine whether the proximity of the proposed renewable energy center use (solar farm) will result in any significant measurable and consistent impact on adjacent property values, given the existing uses and zoning of nearby property at the time of development.

The intended use of our opinions and conclusions is to assist the client in addressing local concerns regarding the proposed solar farm's potential impact on surrounding property values, in addition to addressing the required criteria for obtaining approvals for the proposed solar farm, such as minimizing the impact on adjacent property values. We have not been asked to value any specific property, and we have not done so.

The clients and intended users for the assignment are Kingwood Solar I, LLC and Vesper Energy Portfolio I, LLC. Additional intended users of our findings may include Greene County planning and zoning officials and the Ohio Power Siting Board ("OPSB"). The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").



The assignment is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP). the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute as well as applicable state appraisal regulations.

Based on the analysis in the accompanying report, and subject to the definitions, assumptions, and limiting conditions expressed in the report, our findings follow below.

#### CONCLUSIONS

We analyzed 39 adjoining property sales and over 248 comparable sales, collectively, for the identified 11 solar farms (detailed in the Primary Report), that occurred over the past seven years. We note that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes nor has it deterred the development of new single-family homes on adjacent land.

No empirical evidence evolved that indicated a more favorable real estate impact on the Control Area Sales as compared to the adjoining, Test Area Sales with regard to such market elements as:

- 1. Range of sale prices
- 2. Differences in unit sale prices
- 3. Conditions of sale
- 4. Overall marketability
- 5. New Development
- 6. Rate of Appreciation

We have also reviewed studies prepared by other real estate valuation experts that specifically analyzed the impact of solar facilities on nearby property values. These studies found little to no measurable and consistent difference in value attributed to the proximity to solar farms between unit prices for Test Area Sales and Control Area Sales and noted that solar energy uses are generally considered a compatible use.

Further, we have interviewed market participants, including County and Township Assessors, to give us additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm. These local real estate assessors who have at least one solar farm in their jurisdiction have determined that property adjacent to solar farms have not affected adjacent property values, specifically:

- Bill Nichols, Chief Appraiser with the Trumbull County Auditor in Ohio, stated that he has seen no effect on property values in properties near a solar farm and no one has come in to complain to the Auditor's office about an impact on their property value.
- Beth Fritz, the Valuation Specialist in the Wood County, Ohio Auditor's office has seen no effect or impact on residential, commercial or agricultural property values on any properties with proximity to a solar farm.
- Jarra Underwood, Wayne County Auditor in Ohio reported that she has seen no impact on property values due to their location near a solar farm. There is one solar fam in the county near residential properties and while it is not a highly sought after location, Underwood has still not seen an effect on those property values due to the nearby solar farm.



Considering all of this information, we can conclude that since the Adjoining Property Sales (Test Area Sales) for the existing solar farms analyzed were not adversely affected by their proximity to solar farms, that properties surrounding other solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short- or long-term periods.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Very truly yours,

CohnReznick LLP

Andrew R. Lines, MAI

Will.

Principal - Valuation Advisory Services Certified General Real Estate Appraiser

Florida License No. RZ3899

Expires 11/30/2022

Indiana License No. CG41500037

Expires 6/30/2022

Kentucky License 5663

Expires 6/30/2021

Georgia License No. 360939

Expires 10/31/2021

Ohio License No. 2019001053

Issued 3/25/2019

Patricia L. McGarr, MAI, CRE, FRICS

National Director - Valuation Advisory Services

Certified General Real Estate Appraiser

Indiana License No. CG49600131

Expires 6/30/2022

Patricia S/

North Carolina License No. A8131

Expires 6/30/2021

Virginia License No. 4001016998

Expires 3/31/2022

Michigan License No. 1201072979

Expires 7/31/2022

# **TABLE OF CONTENTS**

LETTER OF TRANSMITTAL	
SCOPE OF WORK	
IDENTIFICATION AND DESCRIPTION OF THE PROPOSED PROJECT	
OVERVIEW OF THE SURROUNDING AREA OF THE PROJECT	
Traffic Patterns and Connectivity	11
Demographic Factors	11
Conclusion	
OHIO SOIL PRODUCTIVITY AND VALUE TRENDS	13
NCCPI PRODUCTIVITY INDEX	13
AREA VALUE TRENDS - CROPLAND	
Area Value Trends – Residential Homes	
LOCAL LAND DEVELOPMENT TRENDS	19
SUMMARY AND FINAL CONCLUSIONS	20
CERTIFICATION	22
ASSUMPTIONS AND LIMITING CONDITIONS	24
ADDENDUM A: APPRAISER QUALIFICATIONS	28



### SCOPE OF WORK

#### **CLIENT**

The clients for this assignment are Kingwood Solar I, LLC and Vesper Energy Portfolio I, LLC.

#### **INTENDED USERS**

Kingwood Solar I, LLC, Vesper Energy Portfolio I, LLC, Greene County planning and zoning department officials, and the Ohio Power Siting Board ("OPSB"); other intended users may include the client's legal and site development professionals.

#### INTENDED USE

The intended use of our findings and conclusions is to address certain criteria required for the granting of approvals for the proposed solar energy center use in Miami, Xenia, and Cedarville Townships, in unincorporated Greene County, Ohio, including the minimization of impact on nearby or adjacent property values. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

#### **PURPOSE**

The purpose of the assignment is to determine whether the proximity of the studied facilities (solar farms) resulted in any significant measurable and consistent impact on adjacent property values, given the existing uses and zoning of nearby property at the time of development; address local concerns regarding a solar farm use having a perceived impact on surrounding property values; and, provide a consulting report that can address criteria for obtaining approvals for the Kingwood Solar I, LLC and Vesper Energy Portfolio I, LLC proposed solar energy center use.

#### **EFFECTIVE DATE**

April 8, 2021

#### DATE OF REPORT

April 8, 2021

#### **PRIOR SERVICES**

USPAP requires appraisers to disclose to the client any services they have provided in connection with the subject property in the prior three years, including valuation, consulting, property management, brokerage, or any other services.



We have not previously evaluated the Project site.

### **INSPECTION**

Patricia L. McGarr, MAI and Andrew R. Lines, MAI have viewed the exterior of the Project and all comparable data referenced in the study in person, via photographs, or aerial imagery. TJ Schemmel personally inspected the areas surrounding the proposed Project in Greene County, Ohio on March 12, 2021.



### IDENTIFICATION AND DESCRIPTION OF THE PROPOSED PROJECT

The Kingwood Solar Project ("the Project") is to be located on land in Miami, Xenia, and Cedarville Townships, in unincorporated Greene County, Ohio, on approximately 1,500 non-contiguous acres of leased land.

Based on development plans for a typical solar farm, the proposed 175-megawatt solar energy center project would generally consist of solar photovoltaic arrays, electrical inverters, underground collection lines, security fencing, safety lighting, and other auxiliary infrastructure. The Project is estimated to generate the amount of power equal to powering approximately 340,000 megawatt hours, per year. It will take approximately 16 months to construct and will be maintained three to five times per year for landscaping and facility maintenance. The energy generated will displace, but not completely replace, consumption of more traditional fuel sources. The energy will be purchased by one corporate user for its Ohio operations and consumption. The Project will be protected by 7-foot fencing with wooden poles and woven wire, as well as vegetative screening of various levels, depending on the adjacent use or street frontage, including shrubs and trees that mature within eight years. Additionally, pollinator soil will be used to support biodiversity in the proposed Project Area.

The Project will be situated on land parcels utilized for agricultural purposes, illustrated below by the polygons in yellow ("Project Area"). The Project parcels are bordered by agricultural farmland, some rural homesteads, and some are across Clifton Road from John Bryan State Park.

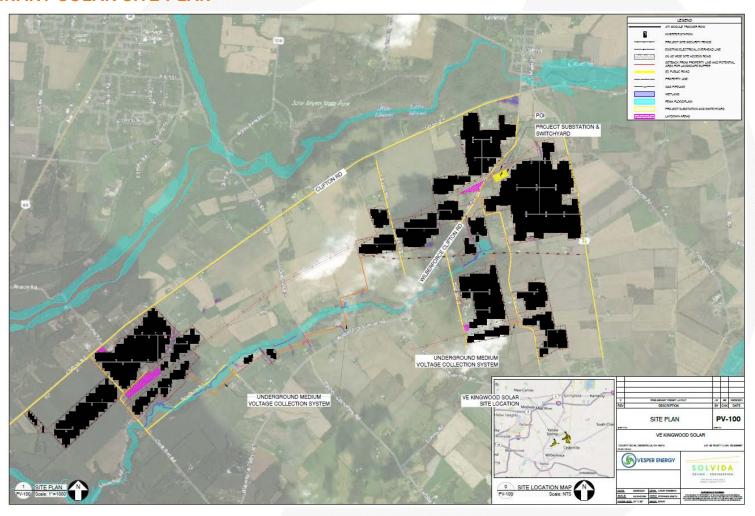


Proposed Kingwood Solar Project Area, provided by Vesper Energy Portfolio I, LLC

The proposed site plan for the Kingwood solar site is presented on the following page.



# PRELIMINARY SOLAR SITE PLAN



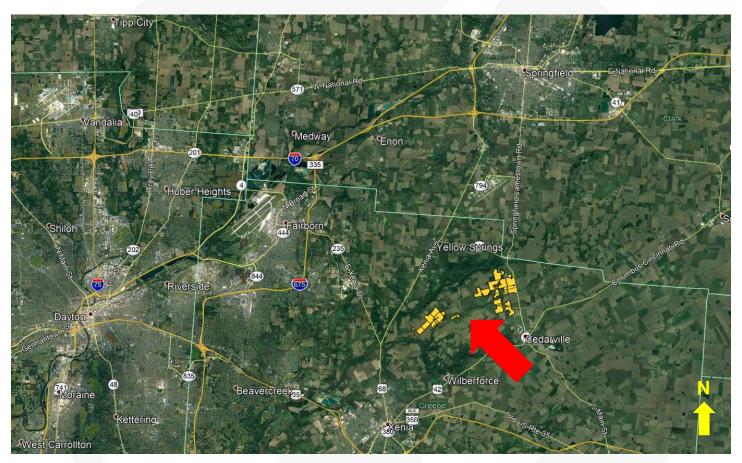
Preliminary Solar Site Plan provided by Vesper Energy Portfolio I, LLC

<u>Disclaimer:</u> This report is limited to the intended use, intended users (Kingwood Solar I, LLC Vesper Energy Portfolio I, LLC, Greene County planning and zoning officials, and the Ohio Power Siting Board as it relates to the evaluation of the Project), and purpose stated within. No part of this report may otherwise be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick LLP.



# **OVERVIEW OF THE SURROUNDING AREA OF THE PROJECT**

The proposed Project consists of a utility-scale, solar energy use in Greene County, Ohio. A surrounding area map indicating the location of the Project (designated by a red arrow) is presented below.



Aerial imagery of site area provided by Google Earth, dated March 2021.



#### TRAFFIC PATTERNS AND CONNECTIVITY

The Project is to be located on land on the south side of Clifton Road between OH-72 to the east, and US-68 to the west. Major arterials in the Project's surrounding area include US-68 and OH-72, which both provide access to Interstate 70, to the north. US-42 runs southwest to northeast, south of the Project area. The Project area is approximately 21 miles east of Dayton, and 12 miles southwest of Springfield.

#### **DEMOGRAPHIC FACTORS**

Demographic data is presented below, as compiled by ESRI, which indicates an increasing number of households in the surrounding townships, although at a decreasing rate from the period 2010 to 2020. The data also indicates that the area is predominantly owner-occupied. Median household income for the three surrounding townships overall, is in line with Green County levels and higher than the state incomes. These features indicate a stable population and economic base overall.

DEMOGRAPHIC PROFILE										
	Miami Twp	Xenia Twp	Cedarville Twp	Greene County	Ohio					
Population										
2025 Projection	5,170	6,668	5,748	176,743	11,968,541					
2020 Estimate	5,023	6,565	5,618	171,251	11,829,645					
2010 Census	4,790	6,537	5,500	161,573	11,536,504					
Growth 2020 - 2025	2.93%	1.57%	2.31%	3.21%	1.17%					
Growth 2010 - 2020	4.86%	0.43%	2.15%	5.99%	2.54%					
Households										
2025 Projection	2,396	2,125	1,355	70,177	4,816,715					
2020 Estimate	2,319	2,076	1,299	67,671	4,754,087					
2010 Census	2,182	1,997	1,185	62,770	4,603,435					
Growth 2020 - 2025	3.32%	2.36%	4.31%	3.70%	1.32%					
Growth 2010 - 2020	6.28%	3.96%	9.62%	7.81%	3.27%					
2020 Owner Occupied (%)	60.62%	69.13%	58.76%	60.37%	58.45%					
2020 Renter Occupied (%)	39.38%	30.87%	41.24%	39.63%	41.55%					
2020 Med. Household Income	\$77,754	\$63,911	\$68,681	\$69,645	\$56,352					
2020 Avg. Household Income	\$108,090	\$81,523	\$88,467	\$94,451	\$77,918					



#### HOMES SURROUNDING PROJECT AREA

Homes surrounding the proposed Project Area are generally on parcels ranging from two to 5 acres. Home construction style varies, with one- and two-story homes both common. The majority of the area homes have sizeable setbacks from roads, and many have trees or shrubs on portions that act as vegetative buffers between parcels.

### CONCLUSION

Land uses in the area surrounding the Project can be categorized as predominantly farmland and some residential homesteads. Our inspection of properties in the area indicates a rural environment, but within only a 15- minute drive to Xenia, or a 30-minute drive to downtown Dayton. New residents to the area appear to prefer additional privacy that the sparsely populated area affords. The factors presented previously indicate that the proposed Project would not be incompatible with surrounding uses and would not negatively impact surrounding properties.



### OHIO SOIL PRODUCTIVITY AND VALUE TRENDS

### NCCPI PRODUCTIVITY INDEX

Crop yields have been the basis for establishing a soil productivity index, and are used by county assessors, farmers, and market participants in assessing agricultural land. While crop yields are an integral part in assessing soil qualities, it is not an appropriate metric to rely on because "yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indices provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management, such as an optimum level." The productivity index, therefore, not crop yields, is best suited for applications in land appraisal and land-use planning.

The United States Department of Agriculture's (USDA) National Resources Conservation Services (NRCS) developed and utilizes the National Commodity Crop Productivity Index (NCCPI) as a national soil interpreter and is used in the National Soil Information System (NASIS), but it is not intended to replace other crop production models developed by individual states.<sup>2</sup> The focus of the model is on identifying the best soils for the growth of commodity crops, as the best soils for the growth of these crops are generally the best soils for the growth of other crops.<sup>3</sup> The NCCPI model describes relative productivity ranking over a period of years and not for a single year where external influences such as extreme weather or change in management practices may have affected production. At the moment, the index only describes non-irrigated crops, and will later be expanded to include irrigated crops, rangeland, and forestland productivity.<sup>4</sup>

Yields are influenced by a variety of different factors including environmental traits and management inputs. Tracked climate and soil qualities have been proven by researchers to directly explain fluctuations in crop yields, especially those qualities that relate to moisture-holding capacity. Some states such as Illinois have developed a soil productivity model that considers these factors to describe "optimal" productivity of farmed land. Except for these factors, "inherent soil quality or inherent soil productivity varies little over time or from place to place for a specific soil (map unit component) identified by the National Cooperative Soil Survey (NCSS)." The NRCS Web Soil Survey website has additional information on how the ratings are determined. The **State of Ohio** does not have its own crop production model and utilizes the NCCPI.

The proposed solar farm will be located in Miami, Xenia, and Cedarville Townships, in unincorporated Greene County, which is in the southwestern quadrant of Ohio. An excerpt of a soil productivity map is presented on the following page as retrieved from the USDA Web Soil Survey, which provides an illustration of the variation in soil



<sup>1</sup> Bulletin 811: Optimum Crop Productivity of Illinois Soils. University of Illinois, College of Agricultural, Consumer and Environmental Sciences, Office of Research. August 200.

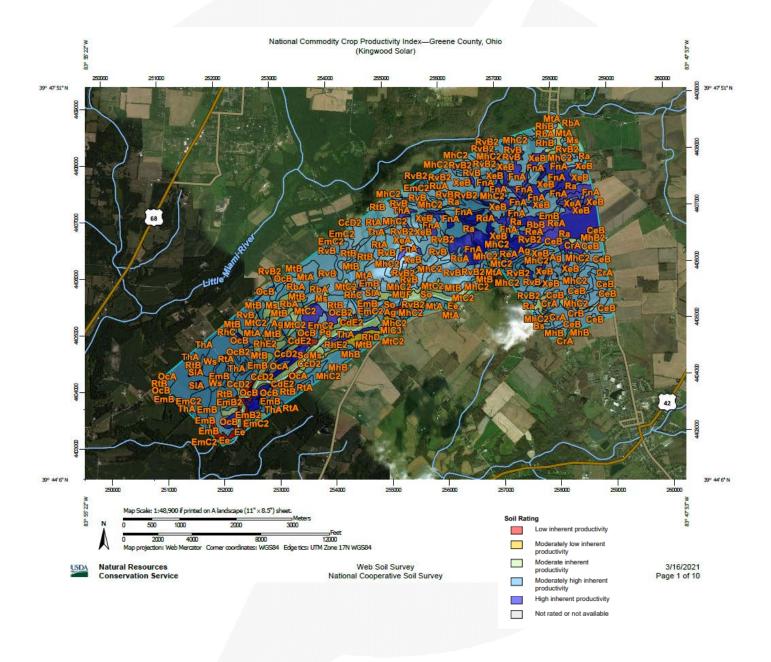
<sup>2</sup> Agricultural land rental payments are typically tied to crop production of the leased agricultural land and is one of the primary reasons the NCCPI was developed, especially since the model needed to be consistent across political boundaries.

<sup>3</sup> Per the User Guide for the National Commodity Crop Productivity Index, the NCCPI uses natural relationships of soil, landscape and climate factors to model the response of commodity crops in soil map units. The present use of the land is not considered in the ratings.

 $<sup>4\</sup> AgriData\ Inc.\ Docs:\ http://support.agridatainc.com/NationalCommodityCropProductivityIndex(NCCPI). as hx$ 

<sup>5</sup> USDA NRCS's User Guide National Commodity Crop Productivity Index (NCCPI)

productivity across the local area that is based on the NCCPI. The approximate site area for the Project is within the boundary delineated in the image below. Note, numerical labels correspond to soil type, not productivity index.



<u>Disclaimer:</u> This report is limited to the intended use, intended users (Kingwood Solar I, LLC Vesper Energy Portfolio I, LLC, Greene County planning and zoning officials, and the Ohio Power Siting Board as it relates to the evaluation of the Project), and purpose stated within. No part of this report may otherwise be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick LLP.



Per the NCCPI, soil productivity is measured on both a numerical scale from 0 to 100, with 0 being the worst and 100 being the best,<sup>6</sup> and by qualitative ratings. The qualitative rating classifications below are determined by the USDA NRCS and provide general comments on the productivity of the soil.

**High inherent productivity** indicates that the soil, site, and climate have features that are very favorable for crop production. High yields and low risk of crop failure can be expected if a high level of management is employed.

**Moderately high inherent productivity** indicates that the soil has features that are generally quite favorable for crop production. Good yields and moderately low risk of crop failure can be expected.

**Moderate inherent productivity** indicates that the soil has features that are generally favorable for crop production. Good yields and moderate risk of crop failure can be expected.

**Moderately low inherent productivity** indicates that the soil has features that are generally not favorable for crop production. Low yields and moderately high risk of crop failure can be expected.

**Low inherent productivity** indicates that the soil has one or more features that are unfavorable for crop production. Low yields and high risk of crop failure can be expected.

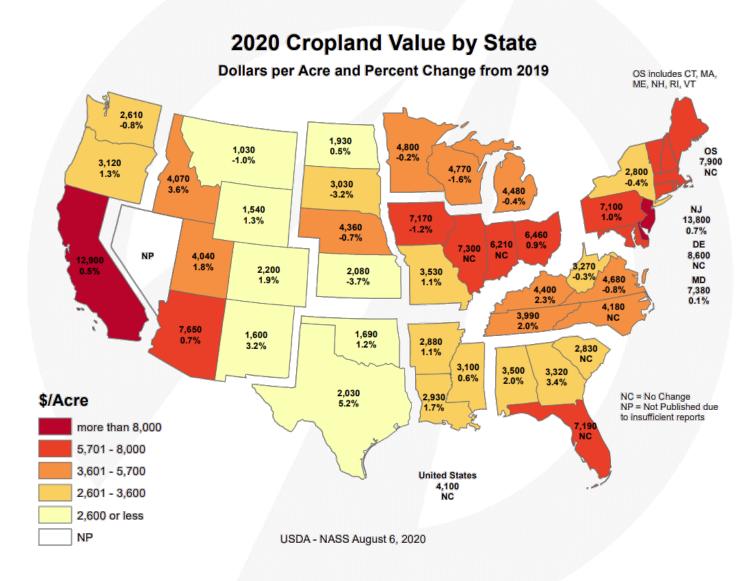
The weighted average soil productivity for the general area was determined to be approximately 71.72. A numerical scale that corresponds to the indicated qualitative ratings above was not available for the NCCPI; however, the soil productivity for this area aligns with the "moderately high inherent productivity" category, with pockets of "high inherent productivity" soils. According to the qualitative scale above, land with the moderately high inherent productivity classification is generally quite favorable for crop production with good yields, and high inherent productivity land is very favorable for crop production.

<sup>6</sup> Quantitative ratings are also show in ranges of 0.00 to 1.00. AgriData Inc. presents the NCCPI index rating multiplied by 100 in a range of 0.00 to 100.00 to show up to four significant figures.



#### **AREA VALUE TRENDS - CROPLAND**

Agricultural land values are heavily influenced by relative crop production yields. The following exhibit compiled by the USDA National Agricultural Statistics Service (NASS) provides an illustration of how regional conditions such as weather conditions, geographies, and soil conditions can affect farm real estate values.



Per the NASS report, the average value of cropland in Ohio for 2020 is \$6,460 per acre, which is an increase of 0.9 percent from 2019. In addition, the report indicated that the average annual growth rate for farmland values in Ohio from 2016 to 2020 was 1.57 percent.<sup>7</sup>



<sup>&</sup>lt;sup>7</sup> https://www.nass.usda.gov/Publications/Todays\_Reports/reports/land0820.pdf

#### AREA VALUE TRENDS - RESIDENTIAL HOMES

The Project is in the northern portion of central Greene County, outside Xenia, and the city of Dayton, Ohio. Homes surrounding the proposed project, outside of municipal areas, are typically one-story homes, some with finished basement square footage.

We researched sales surrounding the Project area over the past twelve months and identified eight market transactions of single-family homes, including manufactured homes. Lot sizes ranged from 0.11 acres to 5 acres. There was one outlier which we removed from analysis, a 72.64-acre property with a mid-century style home with large walkout lower level, that sold for \$665,000. The sales are summarized in the following table.

Home Sales Surrounding Proposed Project Area (March 2020 through February 2021)

Single Family Homes	Median Lot	Median Living	Min. Sale	Max. Sale	Median Sale
	Size (Acres)	Area (SF)	Price	Price	Price PSF
Surrounding Project Area	2.13	1,943	\$96,500	\$370,000	\$116.72

The median unit price of the homes in the area is generally consistent with three of the impact studies CohnReznick has reviewed and provided analysis on to the client, which indicated no adverse impact to their communities.



The table below illustrates residential home value trends for the Project's Greene County location. The source is the Federal Housing Finance Agency's (FHFA) House Price Index (HPI), which is a weighted, repeat-sales index measuring changes in single-family house prices.

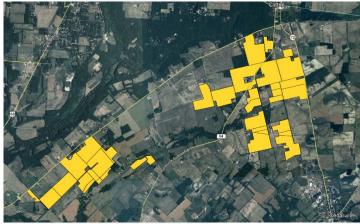
FHFA House Price Index (HPI)						
Greene County, Ohio						
Year	Annual Change	HPI				
	(%)					
2000	2.78	318.94				
2001	3.62	330.48				
2002	1.9	336.74				
2003	0.82	339.52				
2004	4.09	353.39				
2005	4.15	368.06				
2006	1.03	371.83				
2007	0.13	372.31				
2008	-1.51	366.67				
2009	-2.44	357.74				
2010	-1.75	351.46				
2011	-3.51	339.13				
2012	-0.9	336.10				
2013	-1.06	332.53				
2014	2.39	340.47				
2015	2.16	347.84				
2016	2.03	354.91				
2017	6.05	376.39				
2018	5.92	398.69				
2019	5.41	420.24				
2020	3.86	436.46				
Average Annual	1.67					
Change (%)						

Based on the data shown above, residential home values in Greene County have steadily increased at an average annual rate of 1.67 percent, over the past twenty years. Home values in the county are considered to be stable.



### LOCAL LAND DEVELOPMENT TRENDS

Land values can be driven by a site's proximity to the path of development. The closer a property is to the path of development, and without natural barriers to development, the more value a property may have in the future. The Project Area is located in Miami, Xenia and Cedarville Townships, in unincorporated Greene County. All of the parcels in the proposed Project Area are zoned Agricultural. According to the Greene County Future Land Use Map, adopted January 2002, the Project Area has a designated future land use of Agricultural, consistent with its current use.





Aerial Imagery dated August 2005

Aerial Imagery dated March 2021

According to the images above, there has not been much development in the local area over the last 15 years. Generally, any undeveloped agricultural land is considered to be an interim use as the intensity of uses grows in step with macroeconomic factors; however, the Project and the land surrounding are not in the path of development in the foreseeable future and a change in use is not expected.

New solar farms are considered a compatible use with rural areas such as this one, as the tax revenue generated by the solar project can help fund local government, police and fire departments, and most importantly schools, without burdening the districts with additional residents or school-age children.



### SUMMARY AND FINAL CONCLUSIONS

The Project is located in a stable area that is predominantly agricultural in nature with some residential homesteads. Local development has not been robust over the past twenty years, and the surrounding land parcels are not expected to change from agricultural uses. Based on our analysis of real estate taxes in the Primary Report, solar farm uses incur anywhere from 131% to ±1,000% increase in real estate tax revenue for the local area, feeding back into essential services and schools. Local land and residential home prices have remained stable over the past five years and are anticipated to align in the future with macroeconomic changes. Overall, the proposed Project is considered a locally compatible use.

We have reviewed published methodology for measuring impact on property values as well as published studies that analyzed the impact of solar farms on property values. These studies found little to no measurable and consistent difference between the Test Area Sales and the Control Area Sales attributed to the solar farms. Specifically, in a 2017 study conducted by Chisago County Assessor John Keefe, Keefe analyzed the numbers for 15 parcels alongside or near the North Star Solar Farm that sold between January 2016 and October 2017. Based on trends exhibited by 750+ sales throughout the county, Keefe concluded that the homes, located on 375th, 367th, Keystone, Little Oak, Lincoln Trail, and Kost Trail were all "in excess of assessed" and reported that "valuation hasn't suffered."

We have also interviewed market participants, including County and Township Assessors, to give us additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm. These local real estate assessors who have at least one solar farm in their jurisdiction have determined that property adjacent to solar farms have not affected adjacent property values, specifically:

- Bill Nichols, Chief Appraiser with the Trumbull County Auditor in Ohio, stated that he has seen <u>no effect</u> <u>on property values in properties near a solar farm</u> and no one has come in to complain to the Auditor's office about an impact on their property value.
- Beth Fritz, the Valuation Specialist in the Wood County, Ohio Auditor's office <u>has seen no effect or impact</u> on residential, commercial or agricultural property values on any properties with proximity to a solar farm.
- Jarra Underwood, Wayne County Auditor in Ohio reported that she <u>has seen no impact on property</u>
   <u>values due to their location near a solar farm</u>. There is one solar fam in the county near residential
   properties and while it is not a highly sought -after location, Underwood has still not seen an effect on
   those property values due to the nearby solar farm.

Based upon our examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that <u>no consistent negative impact has occurred to adjacent property that could be attributed to proximity to the adjacent solar farm</u>, with regard to unit sale prices or other influential market indicators. Additionally, in our workfile we have retained analyses of additional Test Area subjects, each with their own set of matched Control Area sales, which had consistent results,

8 https://www.cleanenergyresourceteams.org/chisago-county-boards-real-estate-update-shows-solar-has-no-impact-property-values



indicating no consistent and measurable impact on adjacent property values. This conclusion has been confirmed by numerous county assessors who have also investigated this use's potential impact on property values.

We then can conclude that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the solar farm, that properties surrounding the proposed solar farm Project operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick LLP

Andrew R. Lines, MAI

Gull.

Principal - Valuation Advisory Services

Certified General Real Estate Appraiser

Florida License No. RZ3899

Expires 11/30/2022

Indiana License No. CG41500037

Expires 6/30/2022

Kentucky License 5663

Expires 6/30/2021

Georgia License No. 360939

Expires 10/31/2021

Ohio License No. 2019001053

Issued 3/25/2019

Patricia L. McGarr, MAI, CRE, FRICS

Patricia & Mcya

National Director - Valuation Advisory Services

Certified General Real Estate Appraiser

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Expires 6/30/2022

North Carolina License No. A8131

Expires 6/30/2021

Virginia License No. 4001016998

Expires 3/31/2022

Michigan License No. 1201072979

Expires 7/31/2022



### CERTIFICATION

We certify that, to the best of our knowledge and belief:

- 1. The statements of fact and data reported are true and correct.
- 2. The reported analyses, findings, and conclusions in this consulting report are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, findings, and conclusions.
- 3. We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
- 4. We have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- 5. We have no bias with respect to the property that is the subject of this report or the parties involved with this assignment.
- 6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- 7. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value finding, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- 8. Our analyses, findings, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which includes the Uniform Standards of Professional Appraisal Practice (USPAP).
- 9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- 10. Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI and Sonia K. Singh, MAI have viewed the exterior of the Project and of all comparable data referenced in this report in person, via photographs, or aerial imagery. TJ Schemmel has made a personal inspection of the area surrounding the Project in Greene County, Ohio.
- 11. We have not relied on unsupported conclusions relating to characteristics such as race, color, religion, national origin, gender, marital status, familial status, age, and receipt of public assistance income, handicap, or an unsupported conclusion that homogeneity of such characteristics is necessary to maximize value.
- 12. Sonia K. Singh, MAI, Michael F. Antypas, TJ Schemmel and Amanda G. Edwards provided consulting assistance to the persons signing this certification, including data verification, research, and administrative work all under the appropriate supervision.
- 13. We have experience in reviewing properties similar to the subject and are in compliance with the Competency Rule of USPAP.



14. As of the date of this report, Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Sonia K. Singh, MAI have completed the continuing education program for Designated Members of the Appraisal Institute. TJ Schemmel has completed the required continuing education for Practicing Affiliates of the Appraisal Institute.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick LLP

Andrew R. Lines, MAI

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Expires 6/30/2021

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Expires 3/31/2022

Michigan License No. 1201072979

Expires 7/31/2022



### ASSUMPTIONS AND LIMITING CONDITIONS

The fact witness services will be subject to the following assumptions and limiting conditions:

- No responsibility is assumed for the legal description provided or for matter pertaining to legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated. The legal description used in this report is assumed to be correct.
- 2. The property is evaluated free and clear of any or all liens or encumbrances unless otherwise stated.
- 3. Responsible ownership and competent management are assumed.
- 4. Information furnished by others is believed to be true, correct and reliable, but no warranty is given for its accuracy.
- 5. All engineering studies are assumed to be correct. The plot plans and illustrative material in this report are included only to help the reader visualize the property.
- 6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
- 7. It is assumed that the property is in full compliance with all applicable federal, state, and local and environmental regulations and laws unless the lack of compliance is stated, described, and considered in the evaluation report.
- 8. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in the evaluation report.
- 9. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- 10. It is assumed that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
- 11. The date of value to which the findings are expressed in this report apply is set forth in the letter of transmittal. The appraisers assume no responsibility for economic or physical factors occurring at some later date which may affect the opinions herein stated.
- 12. Unless otherwise stated in this report, the existence of hazardous materials, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such substances on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, radon gas, lead or lead-based products, toxic waste contaminants, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the



- assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.
- 13. The forecasts, projections, or operating estimates included in this report were utilized to assist in the evaluation process and are based on reasonable estimates of market conditions, anticipated supply and demand, and the state of the economy. Therefore, the projections are subject to changes in future conditions that cannot be accurately predicted by the appraisers and which could affect the future income or value projections.
- 14. Fundamental to the appraisal analysis is the assumption that no change in zoning is either proposed or imminent, unless otherwise stipulated. Should a change in zoning status occur from the property's present classification, the appraisers reserve the right to alter or amend the value accordingly.
- 15. It is assumed that the property does not contain within its confined any unmarked burial grounds which would prevent or hamper the development process.
- 16. The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have not made a specific compliance survey and analysis of the property to determine if it is in conformance with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect on the value of the property. Unless otherwise noted in this report, we have not been provided with a compliance survey of the property. Any information regarding compliance surveys or estimates of costs to conform to the requirements of the ADA are provided for information purposes. No responsibility is assumed for the accuracy or completeness of the compliance survey cited in this report, or for the eventual cost to comply with the requirements of the ADA.
- 17. Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in this report.
- 18. Any proposed improvements are assumed to have been completed unless otherwise stipulated; any construction is assumed to conform with the building plans referenced in this report.
- 19. Unless otherwise noted in the body of this report, this evaluation assumes that the subject does not fall within the areas where mandatory flood insurance is effective.
- 20. Unless otherwise noted in the body of this report, we have not completed nor are we contracted to have completed an investigation to identify and/or quantify the presence of non-tidal wetland conditions on the subject property.
- 21. This report should not be used as a basis to determine the structural adequacy/inadequacy of the property described herein, but for evaluation purposes only.
- 22. It is assumed that the subject structure meets the applicable building codes for its respective jurisdiction. We assume no responsibility/liability for the inclusion/exclusion of any structural



- component item which may have an impact on value. It is further assumed that the subject property will meet code requirements as they relate to proper soil compaction, grading, and drainage.
- 23. The appraisers are not engineers, and any references to physical property characteristics in terms of quality, condition, cost, suitability, soil conditions, flood risk, obsolescence, etc., are strictly related to their economic impact on the property. No liability is assumed for any engineering-related issues.

The evaluation services will be subject to the following limiting conditions:

- 1. The findings reported herein are only applicable to the properties studied in conjunction with the Purpose of the Evaluation and the Function of the Evaluation as herein set forth; the evaluation is not to be used for any other purposes or functions.
- 2. Any allocation of the total value estimated in this report between the land and the improvements applies only to the stated program of utilization. The separate values allocated to the land and buildings must not be used in conjunction with any other appraisal and are not valid if so used.
- No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in the evaluation.
- 4. This report has been prepared by CohnReznick under the terms and conditions outlined by the enclosed engagement letter. Therefore, the contents of this report and the use of this report are governed by the client confidentiality rules of the Appraisal Institute. Specifically, this report is not for use by a third party and CohnReznick is not responsible or liable, legally or otherwise, to other parties using this report unless agreed to in writing, in advance, by both CohnReznick and/or the client or third party.
- 5. Disclosure of the contents of this evaluation report is governed by the by-laws and Regulations of the Appraisal Institute has been prepared to conform with the reporting standards of any concerned government agencies.
- 6. The forecasts, projections, and/or operating estimates contained herein are based on current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. These forecasts are, therefore, subject to changes with future conditions. This evaluation is based on the condition of local and national economies, purchasing power of money, and financing rates prevailing at the effective date of value.
- 7. This evaluation shall be considered only in its entirety, and no part of this evaluation shall be utilized separately or out of context. Any separation of the signature pages from the balance of the evaluation report invalidates the conclusions established herein.
- 8. Possession of this report, or a copy thereof, does not carry with it the right of publication, nor may it be used for any purposes by anyone other than the client without the prior written consent of the appraisers, and in any event, only with property qualification.



- 9. The appraisers, by reason of this study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made.
- Neither all nor any part of the contents of this report shall be conveyed to any person or entity, other than the appraiser's client, through advertising, solicitation materials, public relations, news, sales or other media, without the written consent and approval of the authors, particularly as to evaluation conclusions, the identity of the appraisers or CohnReznick, LLC, or any reference to the Appraisal Institute, or the MAI designation. Further, the appraisers and CohnReznick, LLC assume no obligation, liability, or accountability to any third party. If this report is placed in the hands of anyone but the client, client shall make such party aware of all the assumptions and limiting conditions of the assignment.
- 11. This evaluation is not intended to be used, and may not be used, on behalf of or in connection with a real estate syndicate or syndicates. A real estate syndicate means a general or limited partnership, joint venture, unincorporated association or similar organization formed for the purpose of, and engaged in, an investment or gain from an interest in real property, including, but not limited to a sale or exchange, trade or development of such real property, on behalf of others, or which is required to be registered with the United States Securities and Exchange commissions or any state regulatory agency which regulates investments made as a public offering. It is agreed that any user of this evaluation who uses it contrary to the prohibitions in this section indemnifies the appraisers and the appraisers' firm and holds them harmless from all claims, including attorney fees, arising from said use.

ADDENDUM A:
APPRAISER QUALIFICATIONS

<u>Disclaimer:</u> This report is limited to the intended use, intended users (Kingwood Solar I, LLC Vesper Energy Portfolio I, LLC, Greene County planning and zoning officials, and the Ohio Power Siting Board as it relates to the evaluation of the Project), and purpose stated within. No part of this report may otherwise be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick LLP.





# Patricia L. McGarr, MAI, CRE, FRICS, CRA Principal, National Director, Valuation Advisory Services

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5802 patricia.mcgarr@cohnreznick.com

Patricia L. McGarr, MAI, CRE, FRICS, CRA, is a principal and National Director of CohnReznick Advisory Group's Valuation Advisory Services practice who is based in Chicago. Pat's experience includes market value appraisals of varied property types for acquisition, condemnation, mortgage, estate, ad valorem tax, litigation, zoning, and other purposes. Pat has been involved in the real estate business since 1980. From June 1980 to January 1984, she was involved with the sales and brokerage of residential and commercial properties. Her responsibilities during this time included the formation, management, and training of sales staff in addition to her sales, marketing, and analytical functions. Of special note was her development of a commercial division for a major Chicago-area brokerage firm.

Since January 1984, Pat has been exclusively involved in the valuation of real estate. Her experience includes the valuation of a wide variety of property types including residential, commercial, industrial, and special purpose properties including such diverse subjects as quarries, marinas, riverboat gaming sites, shopping centers, manufacturing plants, and office buildings. She is also experienced in the valuation of leasehold and leased fee interests. Pat has performed appraisal assignments throughout Illinois and the Chicago Metropolitan area as well as Wisconsin, Indiana, Michigan, New York, New Jersey, California, Nevada, Florida, Utah, Texas, and Ohio. Pat has gained substantial experience in the study and analysis of the establishment and expansion of sanitary landfills in various metropolitan areas including the preparation of real estate impact studies to address criteria required by Senate Bill 172. She has also developed an accepted format for allocating value of a landfill operation between real property, landfill improvements, and franchise (permits) value.

Over the past several years, Pat has developed a valuation group that specializes in serving utility companies establish new utility corridors for electric power transmission and pipelines. This includes determining acquisition budgets, easement acquisitions, and litigation support. Pat has considerable experience in performing valuation impact studies on potential detrimental conditions and has studied properties adjoining landfills, waste transfer stations, stone quarries, cellular towers, schools, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises.

Pat has qualified as an expert valuation witness in numerous local, state and federal courts.



Pat has participated in specialized real estate appraisal education and has completed more than 50 courses and seminars offered by the Appraisal Institute totaling more than 600 classroom hours, including real estate transaction courses as a prerequisite to obtaining a State of Illinois Real Estate Salesman License.

Pat has earned the professional designations of Counselors of Real Estate (CRE), Member of the Appraisal Institute (MAI), Fellow of Royal Institution of Chartered Surveyors (FRICS) and Certified Review Appraiser (CRA). She is also a certified general real estate appraiser with active licenses in numerous states.

# **Education**

North Park University: Bachelor of Science, General Studies

# **Professional Affiliations**

- National Association of Realtors
- CREW Commercial Real Estate Executive Women
- IRWA International Right of Way Association

# **Appointments**

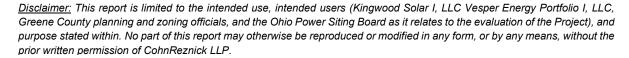
Appointed by the Governor in 2017 to the State of Illinois' Department of Financial & Professional Regulation's Real Estate Appraisal Board; Vice-Chairman - 2018

# **Licenses and Accreditations**

- Member of the Appraisal Institute (MAI)
- Counselors of Real Estate, designated CRE
- Fellow of Royal Institution of Chartered Surveyors (FRICS)
- Certified Review Appraiser (CRA)
- Alabama State Certified General Real Estate Appraiser
- California State Certified General Real Estate Appraiser
- Connecticut State Certified General Real Estate Appraiser
- District of Columbia State Certified General Real Estate Appraiser
- Illinois State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- Louisiana State Certified General Real Estate Appraiser
- Maryland State Certified General Real Estate Appraiser
- Massachusetts State Certified General Real Estate Appraiser
- Michigan State Certified General Real Estate Appraiser
- Nevada State Certified General Real Estate Appraiser
- New Jersey State Certified General Real Estate Appraiser
- New York State Certified General Real Estate Appraiser
- North Carolina State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- South Carolina State Certified General Real Estate Appraiser
- Tennessee State Certified General Real Estate Appraiser



- Texas State Certified General Real Estate Appraiser
- Virginia State Certified General Real Estate Appraiser
- Wisconsin State Certified General Real Estate Appraiser







# Andrew R. Lines, MAI Principal – Real Estate Valuation, Valuation Advisory Services

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Andrew R. Lines, MAI, is a principal in the CohnReznick Transaction and Turnaround Advisory Valuation Advisory practice who is based in the Chicago office and has been a CohnReznick employee for over nine years. Andrew has been involved in the real estate business for more than 20 years and has performed valuations on a wide variety of real property types including single- and multi-unit residential (including LIHTC), student housing, office, retail, industrial, mixed-use and special purpose properties including landfills, waste transfer stations, marinas, hospitals, universities, telecommunications facilities, data centers, self-storage facilities, racetracks, CCRCs, and railroad corridors. He is also experienced in the valuation of leasehold, leased fee, and partial interests, as well as purchase price allocations (GAAP, IFRS and IRC 1060) for financial reporting.

Andrew has completed valuations nationwide for a variety of assignments including mortgage financing, litigation, tax appeal, estate gifts, asset management, workouts, and restructuring, as well as valuation for financial reporting including purchase price allocations (ASC 805), impairment studies, and appraisals for investment company guidelines and REIS standards. Andrew has qualified as an expert witness, providing testimony for eminent domain cases in the states of IL and MD. Andrew has also performed appraisal review assignments for accounting purposes (audit support), asset management, litigation and as an evaluator for a large Midwest regional bank.

Andrew has earned the professional designation of Member of the Appraisal Institute (MAI). He has also qualified for certified general commercial real estate appraiser licenses in Arizona, California, Maryland, Florida, Georgia, Illinois, Indiana, New Jersey and New York. Temporary licenses have been granted in Connecticut, Colorado, Ohio, Indiana, Idaho, Kansas, Minnesota and South Carolina.

# **Education**

Syracuse University: Bachelor of Fine Arts

### **Professional Affiliations**

- Chicago Chapter of the Appraisal Institute Alternate Regional Representative (2016 2018)
- International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)

# **Community Involvement**

- Chicago Friends School Treasurer
- Syracuse University Regional Council Active Member

<u>Disclaimer:</u> This report is limited to the intended use, intended users (Kingwood Solar I, LLC Vesper Energy Portfolio I, LLC, Greene County planning and zoning officials, and the Ohio Power Siting Board as it relates to the evaluation of the Project), and purpose stated within. No part of this report may otherwise be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick LLP.





# **Sonia K. Singh, MAI**Senior Manager – Real Estate Valuation Valuation Advisory Services

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Sonia K. Singh, MAI is a senior manager in CohnReznick Advisory Group's Valuation Advisory practice and based in the Bethesda office. For the past nine years, she has engaged in real estate valuation and other real estate consulting services and valued over \$5 billion in real property.

Sonia is adept at valuing a variety of commercial real estate across the United States, including the following complex property types: athletic clubs; full-service hotels and beach resorts; marinas; historic redevelopment projects; recycling facilities; single-family rental home portfolios; master planned communities; and for-sale residential units or subdivisions. She has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. She has performed these and other appraisals others for purposes including financial reporting, estate planning, gift and estate tax, bond and conventional financing, litigation (eminent domain), and asset management, with the ability to handle appraisals of large portfolios in expedited timeframes. With significant experience in the appraisal of senior living facilities including continuing care retirement communities, skilled nursing facilities, assisted living and memory care facilities, as well as age-restricted housing, Ms. Singh has elevated the firm's modelling of complex healthcare property ownership structures to help illuminate debt/income and lease coverage ratios for federal courts, resulting in millions of dollars in recovered credits for clients.

Additionally, Sonia is experienced in purchase price allocations (GAAP, IFRS, and IRC 1060) for financial reporting, including the early adoption of ASU 2017-01. She has also provided valuation services related to highest and best use analysis, market feasibility studies, and useful life analysis. She has prepared impact studies measuring the possible detrimental impact of economic and environmental influences on property values, including those related to high-voltage transmission lines, distribution warehouses, and solar farms. She has provided expert witness testimony at local county zoning hearings for proposed solar energy uses and their potential detrimental impacts on adjacent property values.

### **Education**

University of Illinois: Bachelor of Science, Actuarial Science



# **Professional Affiliation, Licenses, and Exams**

- MAI Appraisal Institute, Designated Member
- Urban Land Institute, Associate Member
- · Certified General Real Estate Appraiser with Active Licenses in DC and the States of MD, MO, and VA
- Successful completion of the following actuarial exams: Probability (1/P), Financial Mathematics (2/FM), and Models for Financial Economics (3/MFE)

# **Awards and Recognitions**

 2019 National Association of Certified Valuators and Analysts (NACVA) and the Consultants Training Institute (CTI) 40 Under Forty Honoree



# TJ Schemmel

# Senior Consultant, Valuation Advisory Services

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-854-1270 TJ.Schemmel@cohnreznick.com www.cohnreznick.com

TJ Schemmel is a senior consultant in CohnReznick Valuation Advisory Services practice and is based in the Chicago office.

Since 2018, TJ has completed real estate valuations and other real estate consulting services for real property valued at over \$2 billion. TJ has acquired competency in valuing a variety of commercial real estate across the United States, including the following complex property types: full-service hotels, single-family rental home portfolios, cannabis cultivation facilities, hospitals, utility corridors, and for-sale residential units or subdivisions. He has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. He has performed these and other appraisals for purposes including financial reporting, estate planning, bond and conventional financing, litigation (eminent domain and LaSalle Factors), and asset management, with the ability to handle complex appraisals in expedited timeframes. TJ has also participated in assignments to determine the highest and best use of properties, including determining the value of the properties under potential zoning designations and determining the likelihood of potential rezoning.

Prior to joining CohnReznick, TJ was a financial analyst at Avison Young, specializing in office tenant representation and land development. Over five years in this position, TJ participated in office lease negotiations and real estate transactions for companies ranging in size from small start-ups to large multinational corporations. He also supported the land development team on numerous multifamily and office projects for Chicago based investors.

### **Education**

• University of Cincinnati: Bachelor of Business Administration

# **Licenses and Affiliations**

- Licensed Associate Real Estate Trainee Appraiser in Illinois (Thomas Schemmel)
- Practicing Affiliate of the Appraisal Institute (Thomas Schemmel)
- Chicago Tutoring Associate Board Member



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Summary: Application Appendix F (Property Value Impact Studies) electronically filed by Mr. Michael J. Settineri on behalf of Kingwood Solar I LLC